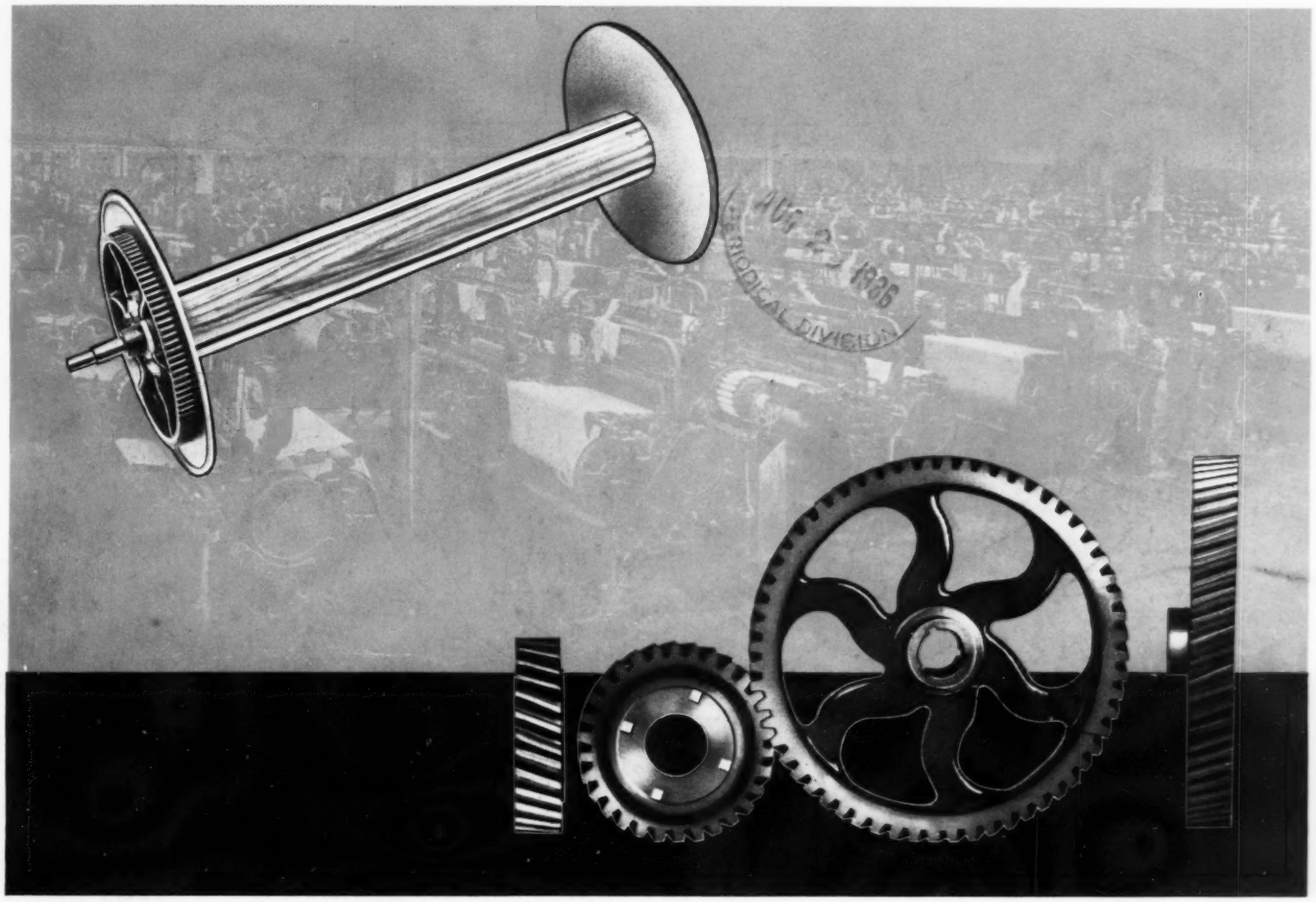
AUGUST, 1936

COTTON

Serving the

TEXTILE INDUSTRIES



For Greater Efficiency In the Weave Room—

Today there is a greater premium than ever for modern efficient equipment. Many mills are finding West Point Spiral Gears and West Point Loom Beams valuable aids in securing continuous and quality production in the weave room.

West Point Spiral Gears

These gears, with three-tooth contact at all times, insure smooth, noiseless operation and decrease the shock. They eliminate backlash. *Write us for more information.*

West Point Loom Beams

High and low places on edge of warp, and consequent bad selvage, can be eliminated by our true running beams. *Ask us to furnish details regarding West Point Loom Beams.*

Also manufacturers of special machinery, cloth room machinery, textile machinery repair parts, bobbin gears, spur and bevel gears in iron, steel and brass.

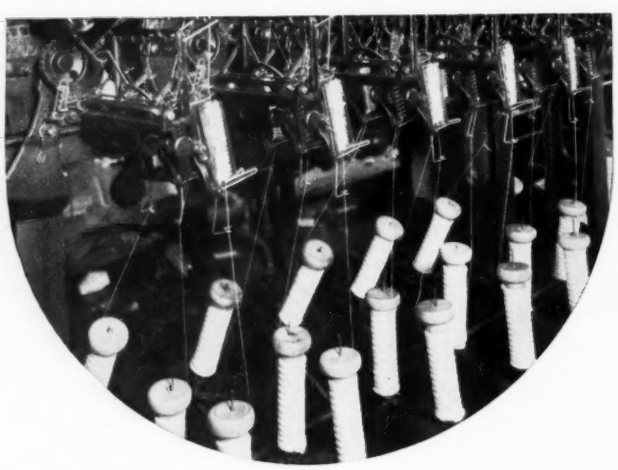
WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

THE FRANKLIN PACKAGE

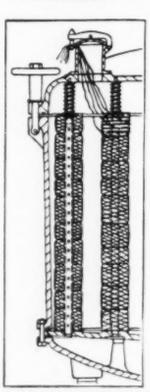
Good TO THE LAST WRAP



Savings to the user of package dyed yarn come largely from lower rewinding costs and less waste in the mill.

Whether or not these savings are actually realized depends on the rewinding quality of the dyed package.

The Franklin Package has superior rewinding quality. This is necessarily so because the Franklin spring tube (unlike rigid dye tubes) permits Franklin Packages to be pressed together vertically in the dyeing machine. This action automatically equalizes the density of all packages and produces a harder, squarer and more perfect package than would otherwise be possible.



FRANKLIN PACKAGES
Ready for Dyeing

Franklin Packages will deliver at high speeds with minimum breakage, either by rotation or overend, and are good to the last wrap. That is, they usually deliver just as well next to the tube as from the outside or the middle. There is seldom any waste due to cobwebs or sluffing off.

This superior performance is an inherent advantage of the Franklin Package and—

PERFORMANCE (not price) DETERMINES VALUE

Specify "Franklin Process" yarn, not just "package dyed" yarn.

FRANKLIN PROCESS

ESTABLISHED 1910

Pioneers in Package Dyeing

Natural Yarns **Colored Yarns** **Glazed Yarns** **Custom Yarn Dyeing** **Dyeing and Processing Machines**

PROVIDENCE • PHILADELPHIA • GREENVILLE • CHATTANOOGA • N. Y. REPRESENTATIVE, 40 WORTH ST.

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Entered as second-class matter at the postoffice, Dalton, Ga., under the Act of March 3, 1879.

500 X Model Looms Will Weave As Much Cloth

Per Week

As 600 E Model Looms

And When They Are Installed
and Fully Equipped in Your Mill

They Will Have Cost You
Much Less Than the 600 E's

It Is Your Total Investment
Not Price Per Loom that Counts

On the Basis of
the Yards of Cloth
They Will Weave

X Model Looms Cost You Less

Than Any Looms You Have Bought from Us in the
Past 20 Years

Let's Talk It Over

DRAPER CORPORATION

Atlanta Georgia Hopedale Massachusetts Spartanburg S C

KEEP your Anti-Friction Bearings *just that way!*

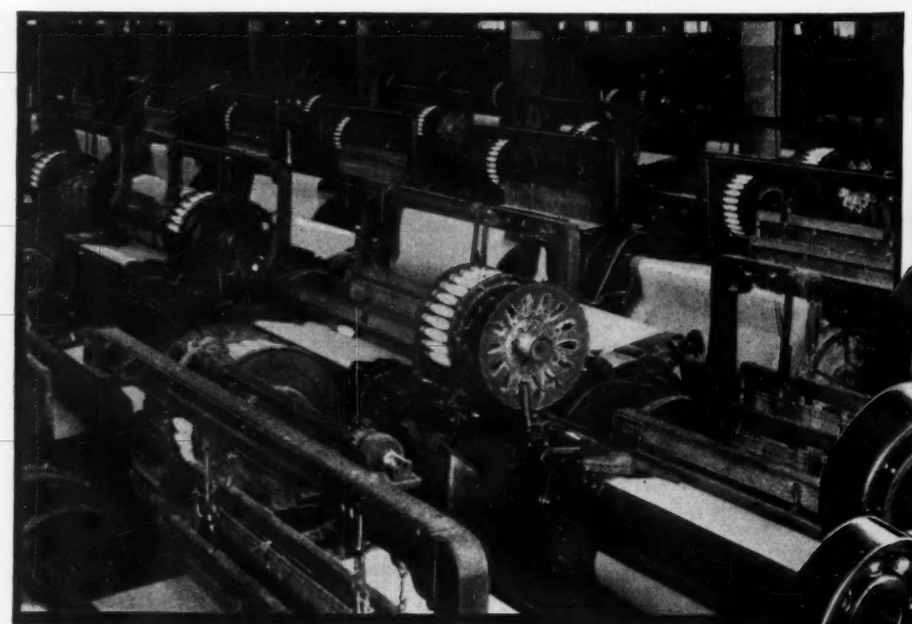
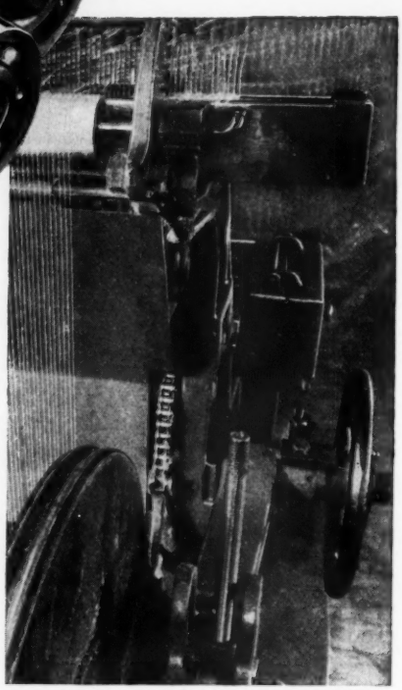


Photo courtesy of Fafnir Bearing Company



This specialized lubricant helps you do it

When you begin the use of Texaco Starfak, you begin to get the full savings built into anti-friction bearings by their makers.

Starfak was developed by Texaco research in cooperation with prominent bearing makers who recognized fully the need for a lubricant made especially for these high-precision bearings.

Special refining enables Starfak to retain its stability in the face of constant high speeds and temperatures.

Prior to the development of Starfak, ball and roller bearings were frequently lubricated with greases that oxidized, broke down, tended to form gummy substances that increased driving torque.

But Texaco Starfak — as stable after long use as when applied — *maintains* a lubricating film on contacting parts, to eliminate drag and get lower power bills.

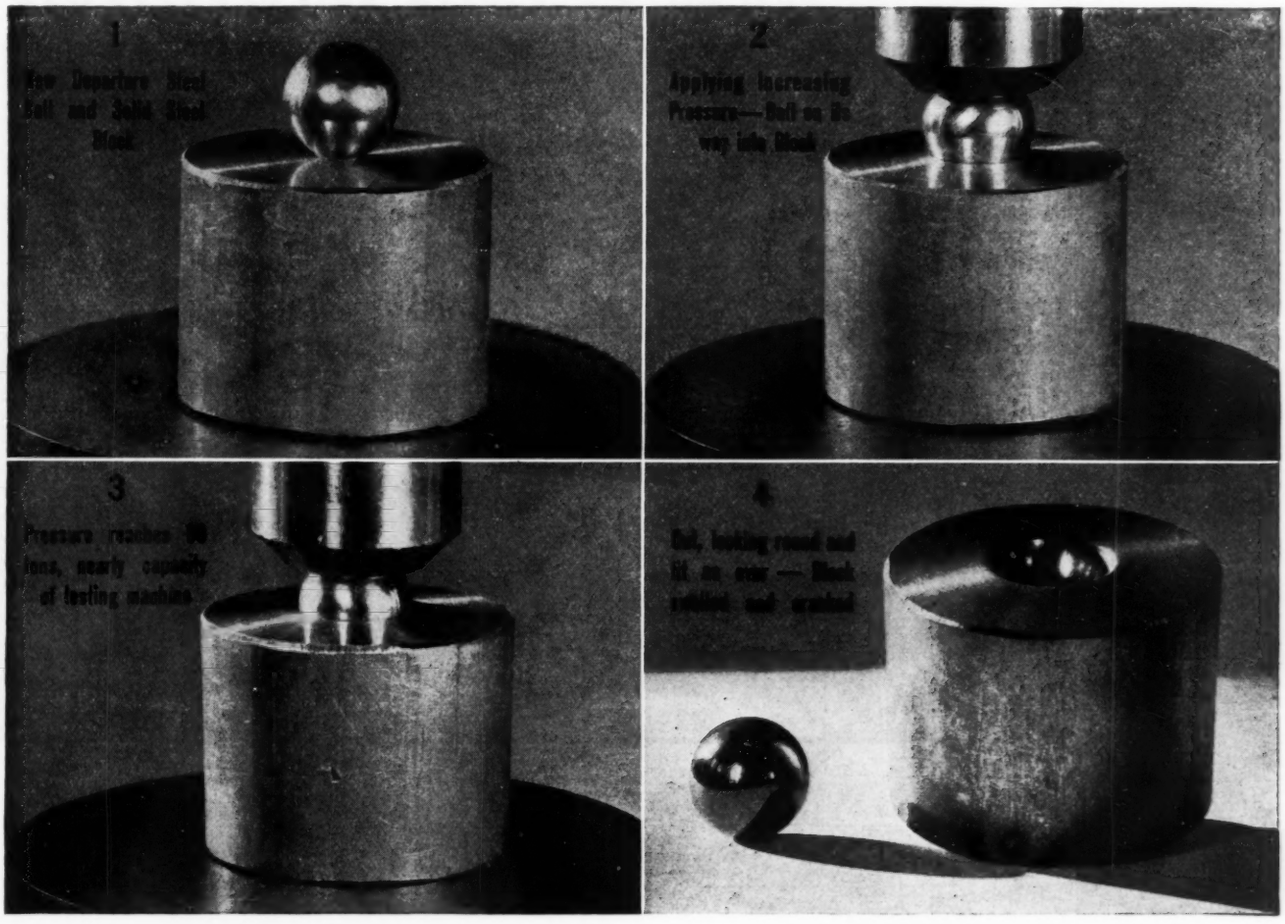
A Texaco representative will be glad to provide practical engineering service to prove the economies of Texaco Products.

TEXACO

THE TEXAS COMPANY
135 East 42nd Street, New York City
Nation-wide distribution facilities assure prompt delivery

TEXACO *Industrial Lubricants*

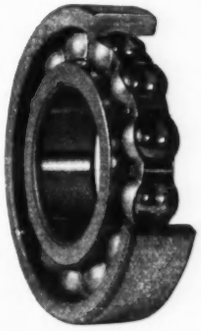
—and No Other Form So Strong!



NATURE invented the sphere — the strongest form — but it has remained to man to produce it in steel, incredibly hard and tough.

These unretouched photos give indisputable evidence of enormous strength — of the ability of the steel ball to resist and survive tremendous loads.

Is it any wonder that a form so strong — that can be produced commercially with greater accuracy than any other shape — that is also the *easiest rolling* and the only form that resists loads with equal facility from any direction—should be chosen for the rolling members in the most efficient anti-friction bearing?



New Departure Ball Bearings, forged from the world's finest steel, are everywhere speeding the work of industry — promoting the business of transportation — they are accepted as the foremost anti-friction bearings.

Nothing Rolls Like a Ball—
No Other Form So Strong

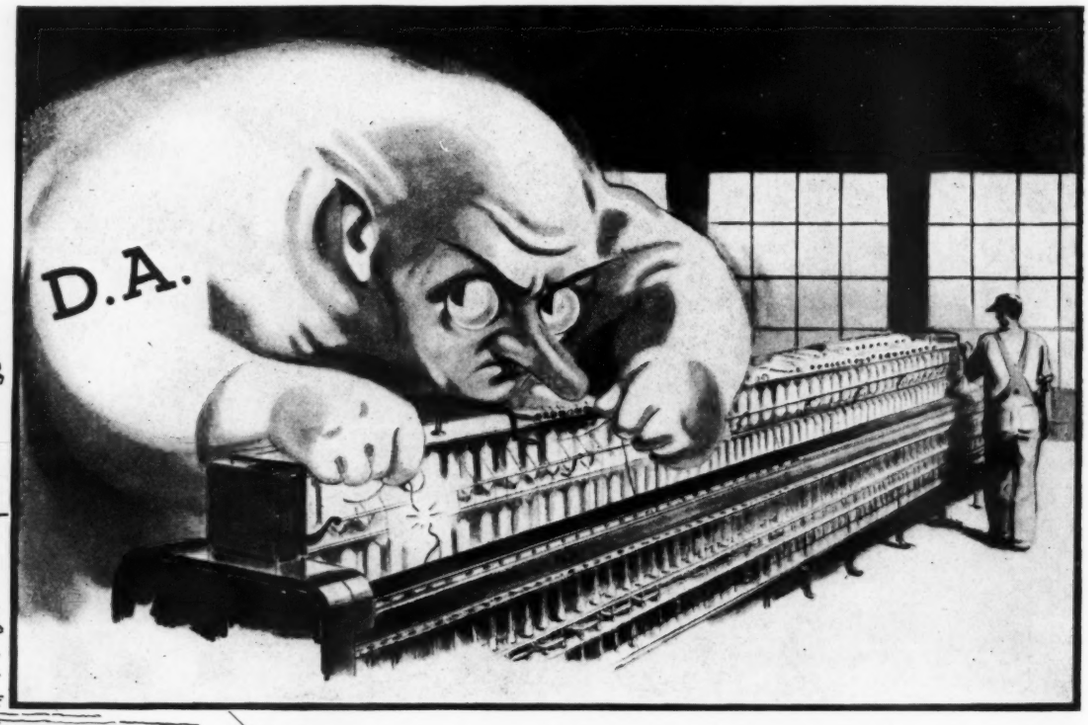
The New Departure Mfg. Co., Bristol, Conn. Sales and Engineering Offices: Detroit, Chicago, San Francisco, London, England.

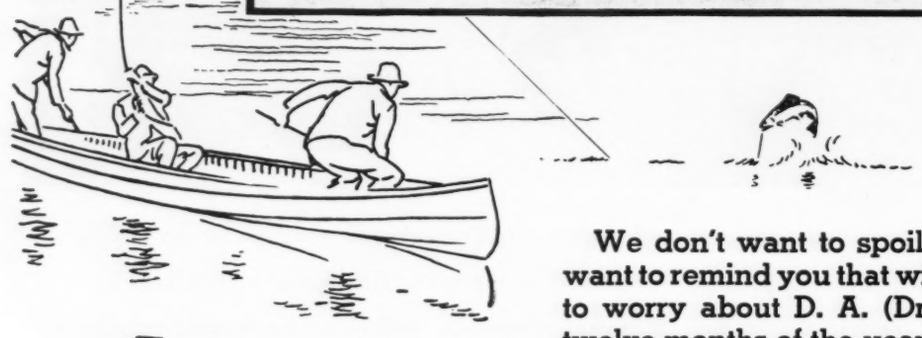
NEW DEPARTURE

THE *FORGED STEEL* BEARING

2451

.... *but* HE *doesn't take a vacation*





IF IT'S A PROBLEM OF *Humidification* CALL IN THE AMCO ENGINEER

We don't want to spoil your fishing. But we want to remind you that winter isn't the only time to worry about D. A. (Dry Air). He's on deck twelve months of the year.

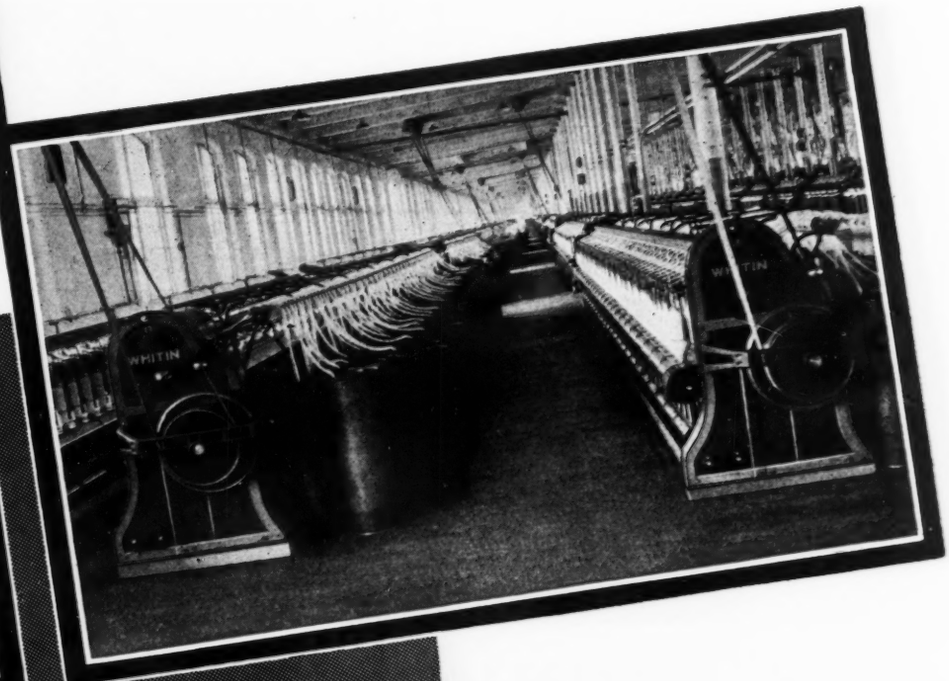
While you're relaxing in some cool spot, will dry, brittle fibres be snapping — back in the mill? As you paddle contentedly in a mountain lake, will D. A. be squeezing out regain? Can you breathe clear mountain air, without thinking of the dust and fly D. A. is stirring up in the spinning rooms?

It will pay you to give D. A. a permanent vacation. A corps of efficient Amco Engineers are ready to solve the technical problems of his trip. To provide Adequate Humidification — fill your mill with money-making air. Soften fibres. Banish dust and fly and static electricity.

AMERICAN MOISTENING COMPANY

Established 1888

BOSTON, MASS. ATLANTA, GA. PROVIDENCE, RHODE ISLAND CHARLOTTE, N. C. GREENVILLE, S. C.



Undisputed Leadership!

Six months ago this statement was true

Twenty-Six Thousand Spindles in successful operation in this country. Feeding more than a quarter of a million Spinning Spindles.

BUT NOT TODAY!

FIFTY-THOUSAND Spindles in successful operation in this country. Feeding more than HALF A MILLION Spinning Spindles.

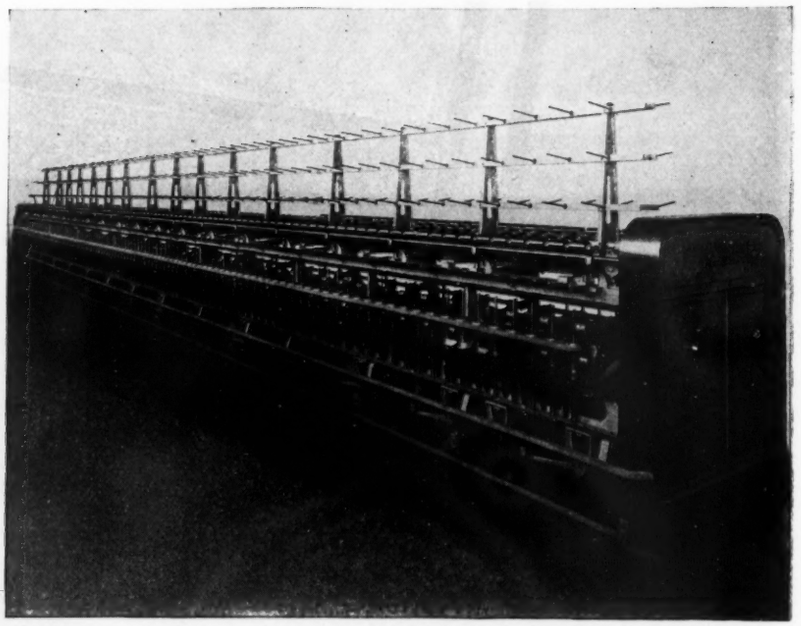
The WHITIN-CASABLANCAS SLUBBER

Standard Long Draft Roving System for Coarse Yarn Numbers

WHITIN MACHINE WORKS

CHARLOTTE, N. C. WHITINSVILLE, MASS., U. S. A. ATLANTA, GA.

SKF - EQUIPPED
BUILT BY
H & B AMERICAN
MACHINE CO.



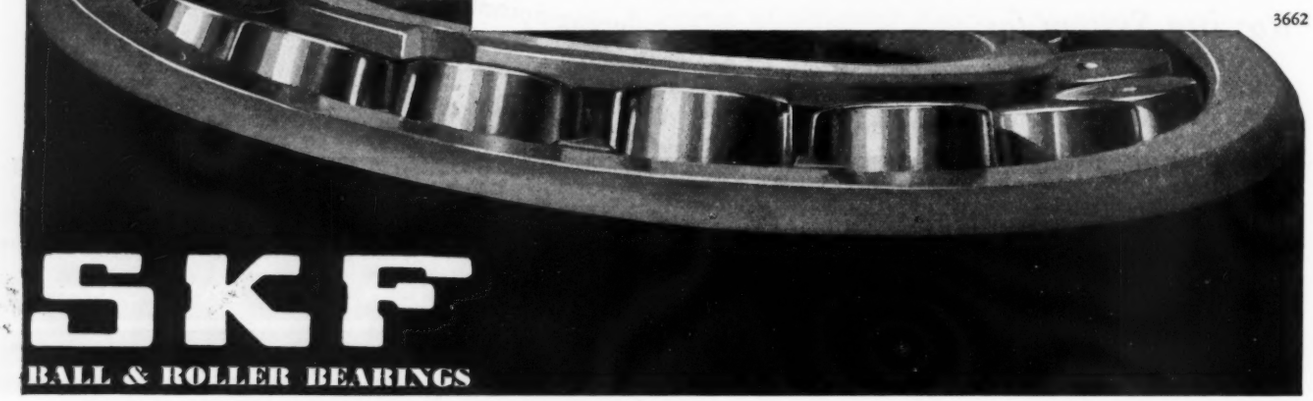
EASY RUNNING CYLINDER SHAFTS
assured when SKF *Bearings are used*

Many and varied uses have been found for SKF Bearings since they pioneered in the textile industry — which is just another way of saying many and varied are the demands for bearing *quality, precision* and *performance.*

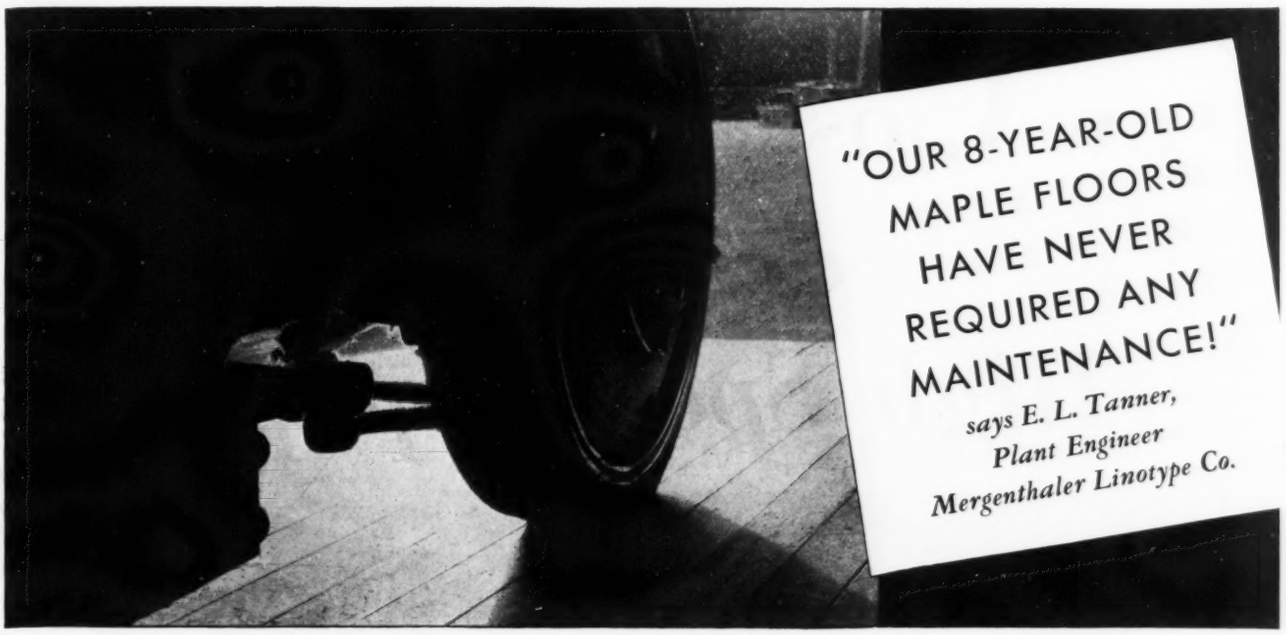
For example, they're used on spindles for uniform twist; on tension pulleys for efficiency; on motors for permanent accuracy. And on the cylinder shaft of this new model H & B Cotton Twister, they not only save power, but they eliminate the necessity for adjustments, require very little attention, never stop for bearing trouble. You can depend upon them for the continuous dependable running so essential to stepped-up production of a quality product.

SKF INDUSTRIES, INC., FRONT ST. & ERIE AVE., PHILA., PA.

3662



SKF
BALL & ROLLER BEARINGS


"OUR 8-YEAR-OLD MAPLE FLOORS HAVE NEVER REQUIRED ANY MAINTENANCE!"
says E. L. Tanner,
Plant Engineer
Mergenthaler Linotype Co.

MERGENTHALER FINDS HARD MAPLE STANDS UP UNDER THE GRIND OF STEEL-WHEELED TRUCKS AND TRACTORS

COVERING the equivalent of two city blocks, housing 2500 employees, the Mergenthaler plant is nevertheless distinguished by its cleanliness and efficiency. 90 men are employed in maintenance work.

Needless to say, Mergenthaler knows maintenance costs. Therefore, what E. L. Tanner, Plant Engineer, says about Mergenthaler's floors is especially interesting:

"The Maple flooring in some buildings has been installed for eight years; in others, for fifteen years. The eight-year-old flooring is in excellent condition and has never required any maintenance; the fifteen-year-old flooring has required very little.

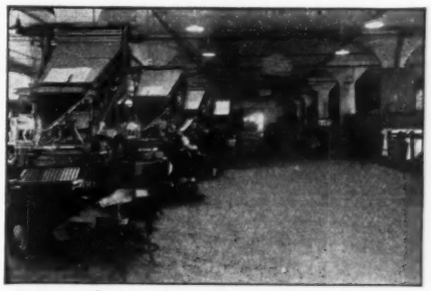
"Our plant uses heavy machines," continues Mr. Tanner, "and trucks and tractors with steel wheels are constantly carrying heavy loads back and forth through the building. Yet, none of the floors have shown appreciable wear.

"Because of the excellent service this company has had from present flooring, we shall certainly specify Maple in any new buildings."

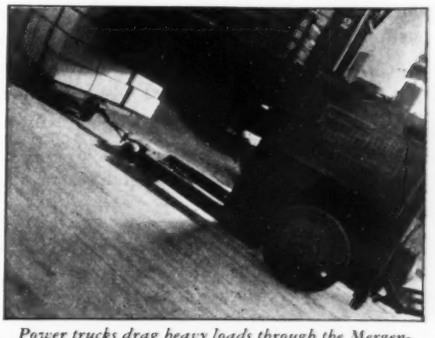
Wherever maintenance costs are carefully checked, Northern Hard Maple proves to be the flooring of unequalled economy. Tough-fibred, tight-grained, it is lastingly smooth, offers remarkable resistance to abrasion, does not sliver, splinter, or develop ridges. Creates no dust—provides no lodging places for dirt. Treated with the new penetrating heavy-duty finishes, it minimizes maintenance and cleaning costs—brushing alone keeps it clean. Hard Maple simplifies plant alterations; its resilience and warmth reduces fatigue and aids workers' efficiency.

You can floor with Maple in blocks or strips, with or without pattern, over wood or concrete sub-floors or over your present floor. Before modernizing or building anew, be sure to investigate its many advantages.

Our "Grading Rules" book describes the various grades and gives standard specifications for laying and finishing. Write for free copy.



Every employee in this modern plant is asked to "help keep the standards that good tools, upkeep, cleanliness and care will produce." Remarkably clean plant conditions are maintained. The Hard Maple Flooring contributes substantially to this effort.



Power trucks drag heavy loads through the Mergenthaler buildings. But their steel wheels do not cut into tough-fibred, tight-grained Hard Maple floors.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1794 McCormick Building, Chicago, Ill.

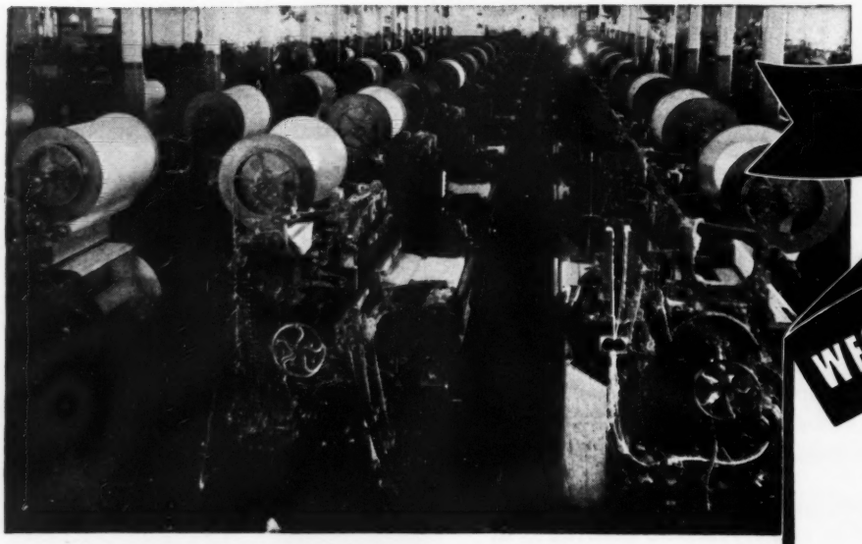
See our catalog data in Sweet's, Sec. 15/53. Let our service and research department assist you with your flooring problems. Write us.

Floor *with* Maple

The letters **MFMA** on Maple, Beech or Birch Flooring signify that the flooring is standardized and guaranteed by the Maple Flooring Manufacturers Association, whose members must attain and maintain the highest standards of manufacture and adhere to manufacturing and grading rules which economically conserve these remarkable woods. This trade-mark is for your protection. Look for it on the flooring you use. **MFMA**

MFMA Approved

Low Cost Weaving *demands* *High Speed Equipment*



Crompton & Knowles type C-3 Towel Loom in a large southern mill. Looms are powered by Westinghouse 3-point suspension motors and WK starters.

C 3 LOOM

WESTINGHOUSE DRIVE

IN many cases the speeding up of old looms has failed to prove the answer to low cost weaving.

But weaving costs can be lowered right away by replacing old looms with modern high-speed equipment such as the Crompton & Knowles C-3 looms equipped with Westinghouse Motors and Control.

When you buy high-speed equipment specify Westinghouse Drive because it's built to keep these modern looms at peak output. Here are the reasons:

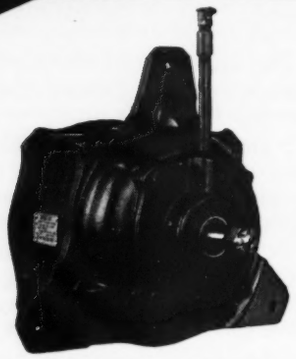
Ample power for breaking in and reserve capacity for all loads.

High efficiency and power factor that give low power consumption.

Low maintenance is assured because the oil filler is easily accessible, the oil column is vertical and has extra capacity for quick filling. Over-oiling is impossible and oil cannot get into the windings.

Tried-and-Proved Control that protects the motor against dangerous overloads yet permits safe overloads without shut-down.

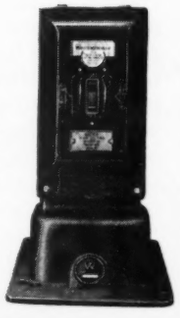
Westinghouse drive is mated to the latest types of looms such as the C & K Models C3, C4, S3, S4, W2, W3 and Draper models X, C, XK and XL. Write for further details. Westinghouse Electric & Manufacturing Co., East Springfield, Mass. J 90035



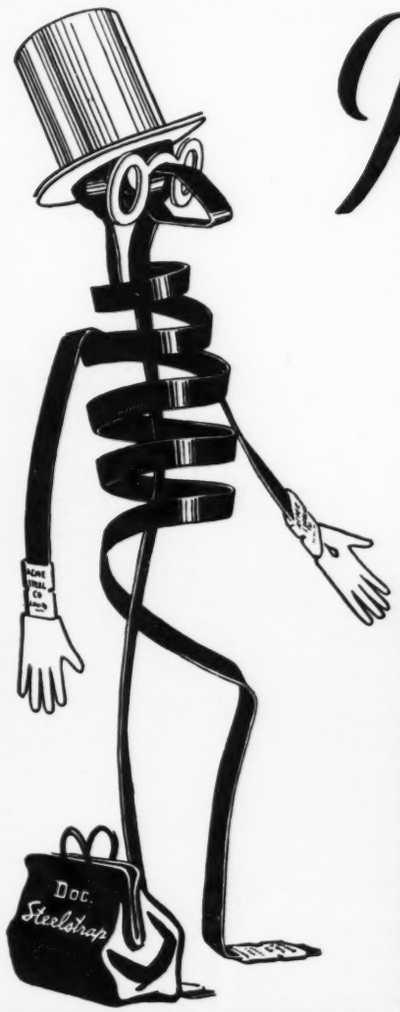
Westinghouse Loom Motors have extra strength, high efficiency and long wearing bearings to withstand the strain of high-speed loom operation.

★

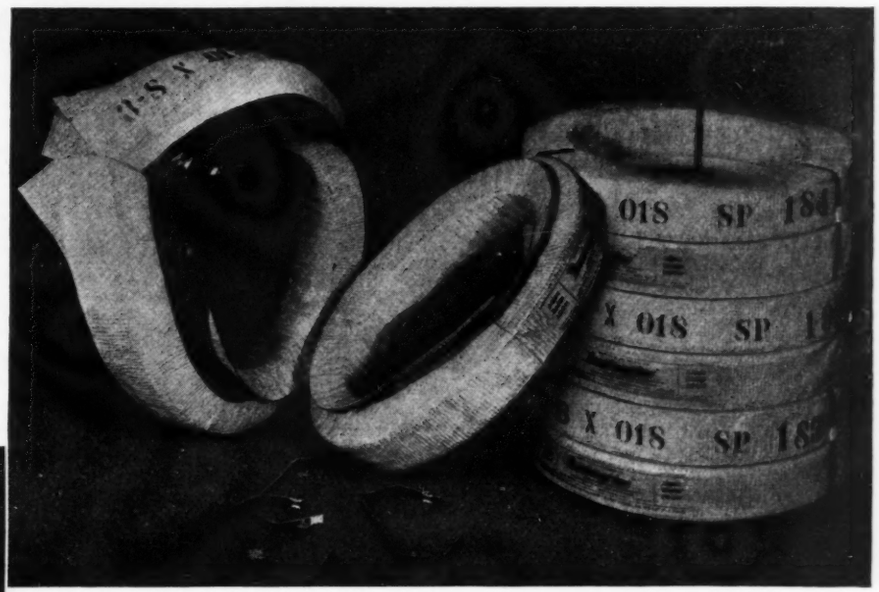
Pedestal-mounted WK-18 starter. Guards the motor against dangerous overloads. Safely and quickly reset when tripped.



Westinghouse LOOM DRIVE



I keep ACME BALE TIES *Clean* BY THE ACME PATENTED ANNULAR WRAP



STOCKS FOR STORAGE

● *Here's another advantage of my Annular Wrap. (I'm really proud of it.) Storage space is cut in HALF. Put twice as many coils in the same storage space, or the same amount in half the area.*

● It's "made-to-order" for textile shippers, my method of wrapping Acme Bale Ties. The coils arrive sparkling clean, which means that hands are kept clean, and there's no danger of soiling textiles while they're being packed.

This snug wrapping keeps moisture and dust safely on the outside until each bundle is opened for use.

Remember—these one-piece coils of Acme Bale Ties insure a snug, ship-shape "package" whether it's a bale, carton or box.

Faster work in the shipping room is the result when Acme Bale Ties join the force. Why not let me send you a set of tools, seals and band to try out in your mill. No obligation.

Doc. *Steelstrap*

Acme Steelstraps

ACME STEEL COMPANY, GENERAL OFFICES: 2847 ARCHER AVE., CHICAGO
ATLANTA NEW ORLEANS SAN FRANCISCO BOSTON NEW YORK
Branches and Sales Offices in Principal Cities

FOR STEADFAST UNIFORMITY AND SUPREME QUALITY IN

STARCH

YOU CAN ALWAYS RELY ON

STALEY

There are many starches on the market. The main question is—do you KNOW the starch you use is safe—always dependable, in uniformity as well as quality?

By using "just starch" you can never be sure that the mixture you prepare today will be as uniform in action and results as the one you prepared yesterday.

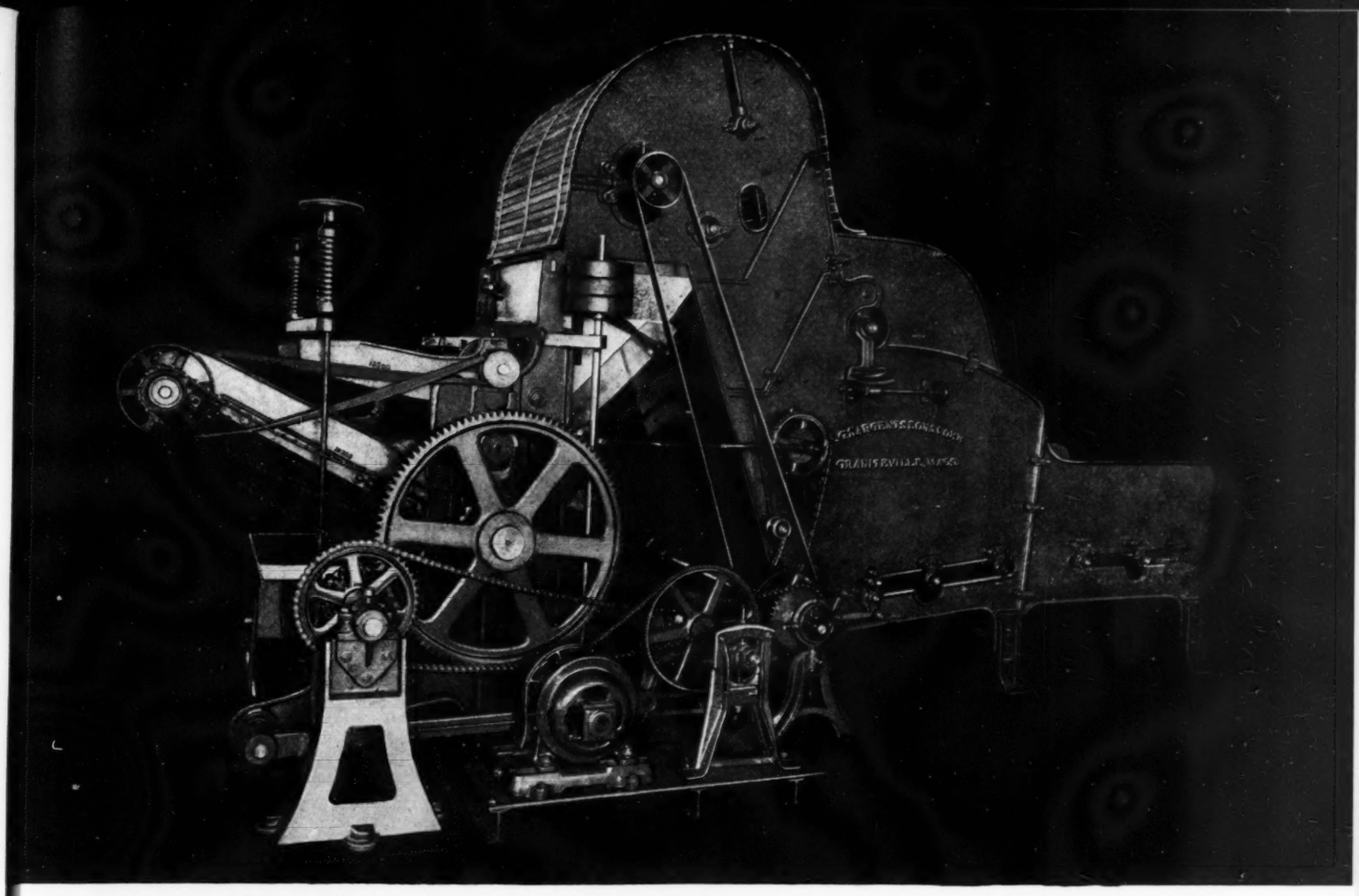
By demanding STALEY STARCHES, you can always KNOW that day after day, month after month and year after year—every bag you open will be exactly the same. With it you can prepare size mixtures that assure perfect penetration, adhesiveness and elasticity at your slashers. You can be assured of unvarying, non-shedding warp yarn with smooth, flexible strength that weaves efficiently with minimum loom stoppages and no chafing.

You Can Always Rely On Staley Starches.

Have you tried Staley's new Non-congealing, Fast Cooking Warp Size?

A. E. STALEY MFG. CO., DECATUR, ILL.

Atlanta Dallas Chicago New York
Spartanburg Philadelphia Boston San Francisco



In Service Since 1852

SARGENT PRODUCTS

Acidifying Machines—Automatic Extractors—Automatic Feeders—Backwashers—Backwash Dryers—Bagging Machines—Ball Winders—Carbonizing Dryers—Cloth Dryers—Carbonizing Dusters—Cotton Stock Dryers—Crush Roll Machines—Press Roll Machines—Single Apron Dryer—Skein Dryer—Special Dryers—Wool Dryers—Wool Washers—Yarn Conditioners—Yarn Scouring Machines—Burr Pickers—Mixing Pickers—Dusting Machines—Package Dryers—Tray Dryers—Opening Machines.

The Modern way to Extract
Scouring, Bleaching or Dye Liquors

The outstanding advantages of this means of extracting liquids from saturated fibres, include the following:

a. An even continuous flow of production into and through Dryer thus permitting maintenance of drying temperature with uniform drying results.

b. Fewer "bunches" of stock and consequent greater ease of air in Dryer to penetrate, than through stock "matted" by a hydro-extractor.

c. The natural results of continuous as compared with intermittent actior

d. Reduced danger hazard.

e. Saving in power.

f. Ease in operation. (Ask the men who tend them.)

g. Greater production with less labor. One firm states: One man operates the machine doing 6,000 pounds per day. Before two men and two hydroes did the same amount of work.

Compare this Extractor with your present system, then write us for further particulars and prices.

C. G. SARGENT'S SONS CORP.
BUILDERS

Graniteville, Mass.—Founded 1852

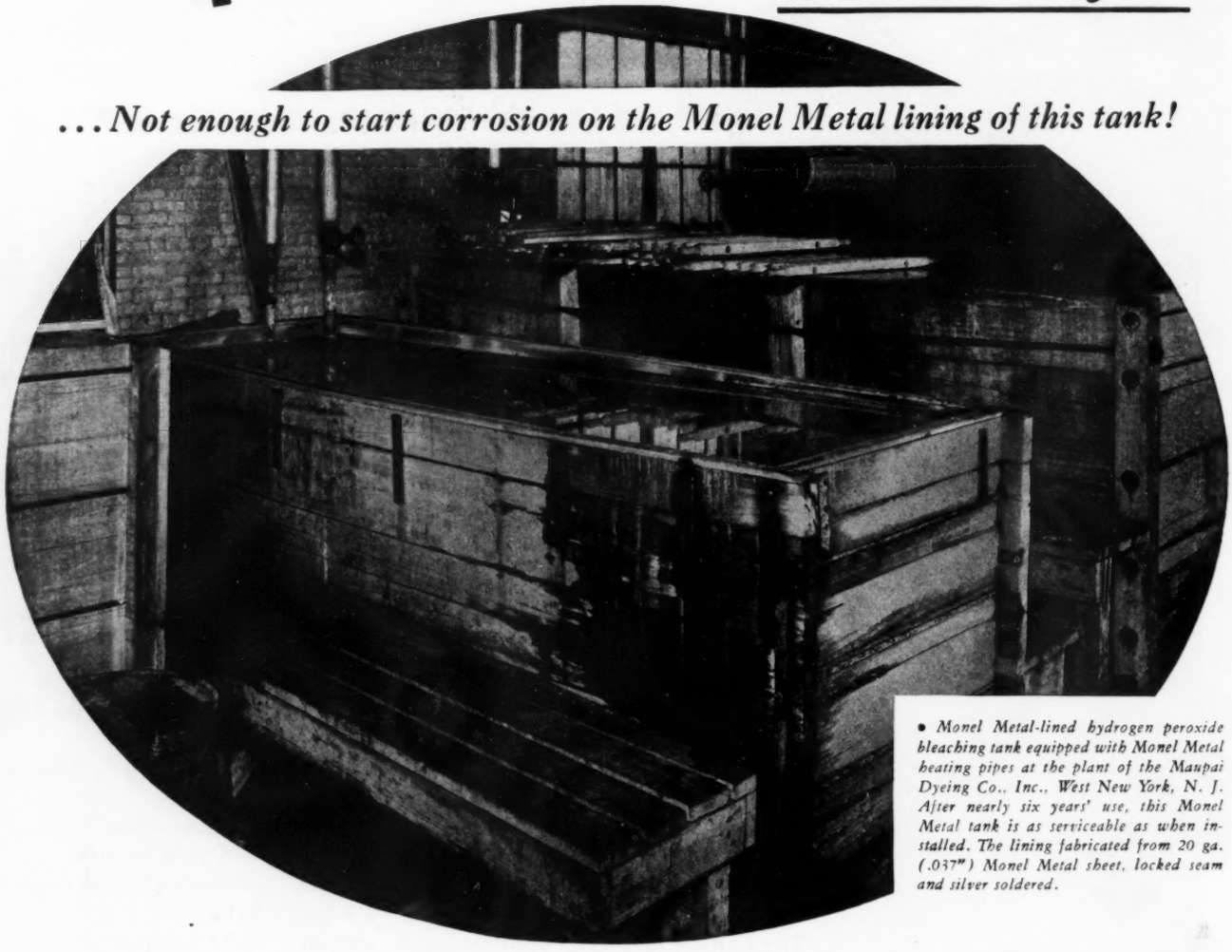
Southern Agents:
Fred H. White, Charlotte, N. C.
Fred P. Brooks, Atlanta, Ga.

Philadelphia Agent:
F. E. Wasson
930 Drexel Bldg.

Sargent is the Pioneer American Builder of Dryers

How many PEROXIDE BLEACHES *in 2190 days?*

. . . Not enough to start corrosion on the Monel Metal lining of this tank!



• *Monel Metal-lined hydrogen peroxide bleaching tank equipped with Monel Metal heating pipes at the plant of the Maupai Dyeing Co., Inc., West New York, N. J. After nearly six years' use, this Monel Metal tank is as serviceable as when installed. The lining fabricated from 20 ga. (.037") Monel Metal sheet, locked seam and silver soldered.*

COUNT 'em for yourself . . . 6 years makes 2190 days. And that's how many days this bleaching tank has held an almost continuous succession of baths of hydrogen peroxide, for bleaching cottons, rayons, and silk.

At that rate, you can't much wonder that the Maupai Dyeing Company is well satisfied at the job the Monel Metal lining of this tank is doing for them. They examined it recently and report it "as serviceable as when installed." So are the heating pipes, also of Monel Metal.

The cottons, rayons and silks that have come out of this tank have come out in perfect condition too. No rust or corrosion on Monel Metal to cause off-shades or stains. And Monel Metal's satin-smooth surface does not harm the most delicate fabrics, of course.

Chances are, next time Maupai lines a tank, they'll repeat on Monel Metal. Another dyer (name on request) has been doing that with every tank he's added since his first Monel Metal tank, years back. He uses the tanks for bleaching woolens in hydrogen peroxide.

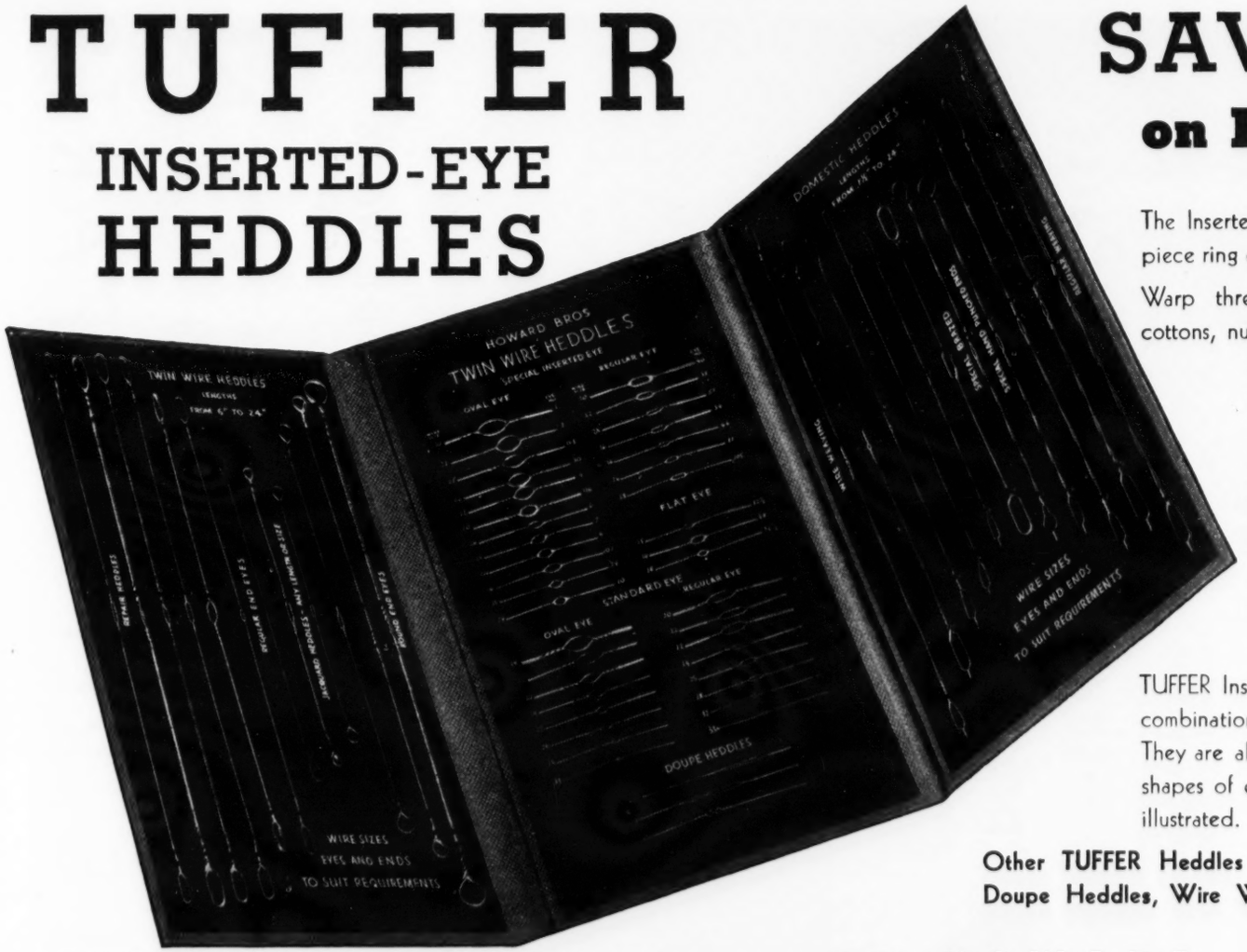
Take a walk through your plant . . . see if you haven't some installations where you could profit by the corrosion-resistance, the strength, toughness and smoothness of this high-Nickel alloy. We'll gladly send you full information about Monel Metal for use in peroxide bleaching. Address:

THE INTERNATIONAL NICKEL COMPANY, INC.
67 WALL STREET NEW YORK, N. Y.

Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

MONEL METAL

TUFFER
INSERTED-EYE HEDDLES



SAVE WEAR
on Heddle and Warp

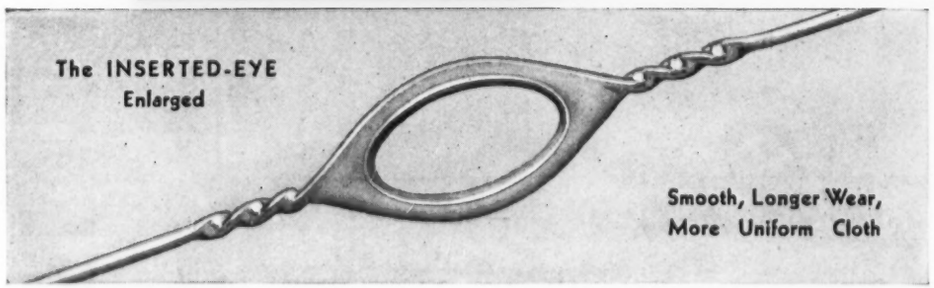
The Inserted-Eye—exclusive with Howard Bros.—is a one-piece ring of metal inserted in TUFFER Twin Wire Heddles.

Warp threads—particularly heavier woolens, worsteds, cottons, nub and slub yarns slide through smoothly without breakage, and the Inserted-Eye does not wear and chafe them. There are less broken ends, less seconds, and more uniform cloth.

Boss Weavers tell us they use less Repair Heddles when TUFFER Inserted-Eye Heddles are on the harnesses. In the hundreds of mills where TUFFER Inserted-Eye Heddles are being used constantly, they are always re-ordered, and actually show a nice saving in time and money.

TUFFER Inserted-Eye Heddles can be made in any size or combination of center and end eyes for your particular work. They are also available for quick delivery in many sizes and shapes of eyes and ends as well as several sizes of wire as illustrated. Write for samples.

Other TUFFER Heddles are Repair Heddles, Jacquard Heddles, Doupe Heddles, Wire Weaving Heddles and Domestic Heddles.



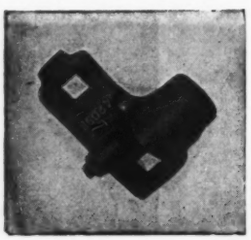
HOWARD BROS. MFG. CO.

HOME OFFICE AND FACTORY: **WORCESTER, MASS.**

Southern Plant: 244 Forsythe St., Atlanta **Branch Offices:** Philadelphia, Dallas

Products: Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards—Napper Clothing, Brush Clothing, Strickles, Emery Fillets, Top Flats Recovered and extra sets loaned at all plants—Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant—Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted-Eye and Regular Wire Heddles

MASTER MECHANICS AGREE



--that Henderson Parts prevent many breakdowns

When good master mechanics get together you'll usually find one or more enthusiastic boosters for HENDERSON Textile Repair Parts. They are enthusiastic because these better parts save them a lot of "grief" in unnecessary repair work, not to speak of the fact that they are installed more quickly and easily because they always fit perfectly.

HENDERSON Parts are built to last longer and operate with smoother efficiency than the parts they replace. A study of the weak places in present-day textile machine parts enables us to know where to reinforce Henderson Parts so they won't break easily. Good materials, expert workmanship and precision patterns contribute to the superiority and economy of these modern parts.

Why not let YOUR master mechanic become a Henderson booster, and at the same time save your mill much in maintenance costs? We will gladly quote prices on any part for any make of textile machine. Write us today.

HENDERSON FOUNDRY & MACHINE WORKS
HAMPTON GEORGIA

HENDERSON
TEXTILE REPAIR PARTS

Unequalled
SPEED WITH PRECISION

The same engineering ingenuity that has contributed so much to the efficiency of Ashworth Card Clothing has likewise contributed much to the efficiency of Ashworth factory equipment, thereby assuring uniform quality and prompt deliveries.

The machine illustrated herewith is of our own design and manufacture. It pricks the foundation, cuts, bends and inserts the wire and bends the wire again after insertion, all in one continuous operation. It operates at a speed that is unequalled in the card clothing industry on a practical production basis.

Such is the precision of this machine that performance approaches perfection. There is nothing left to chance however, as every foot of Ashworth Card Clothing is HAND INSPECTED before shipment by specially trained personnel.

Ashworth
PIONEERS IN CARD CLOTHING

ASHWORTH BROS., INCORPORATED
Woolen Div.: AMERICAN CARD CLOTHING CO.

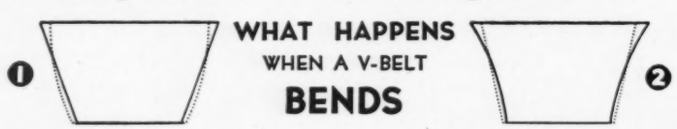
Factories in Fall River, Worcester, and Philadelphia
Sales Offices and Repair Shops in Charlotte, Atlanta and Greenville
Southwestern Representative: Textile Supply Co., Dallas, Tex.

PRODUCTS AND SERVICES: Card clothing for cotton, wool, worsted, silk and asbestos cards and for all types of napping machinery; brusher clothing and card clothing for special purposes; lickerin and garnet wire; sole distributors for Platt's Metallic Wire; lickerins and top flats reclothed at all plants.

Bend ANY V-Belt and FEEL IT Change Shape

You'll learn exactly why the CONCAVE SIDE SAVES YOU MONEY

When *any* V-belt bends, the top is under tension and becomes *narrower*. The bottom, under compression, *widens*. These stresses distort a *straight sided* V-belt into a shape that does not fit the sheave groove —as shown in Figure 1, below. Note the out-bulge of the sides.



Now look at Figure 2. Here you see that the *same shape change* merely *straightens* the precisely engineered concave side. There is no side-bulge. *Two* savings result: 1. You get *uniform* side-wall wear, *longer life!* 2. The full side-wall grip on the pulley insures against slippage on sudden load increases—a saving both in belts and *power*.

The Gates Vulco Rope is the only V-Belt built with the patented concave side.

Engineering Offices and Stocks in all Large Industrial Centers

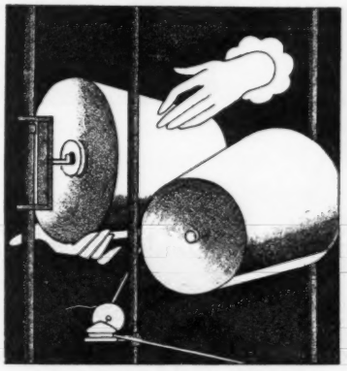
THE GATES RUBBER CO., *Factory Branches*

Terminal Bldg. HOBOKEN, N. J.
1524 So. Western Ave. CHICAGO
747 Warehouse St. LOS ANGELES
2213 Griffin St. DALLAS
999 So. Broadway DENVER

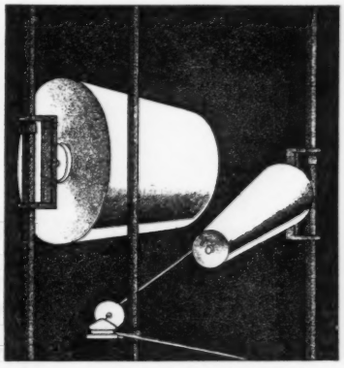
GATES VULCO ROPE DRIVES

6 STEPS TO CHANGE YARN COUNTS

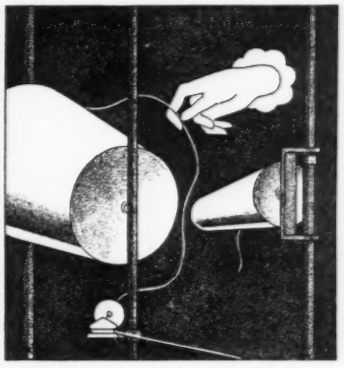
The Universal System of High Speed Coning and Warping offers flexibility to those mills whose yarn count requirements are constantly changing.



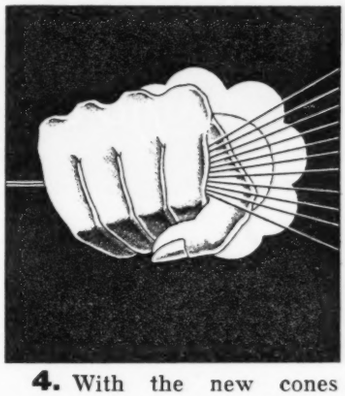
1. Before the end of one warping order, the extra cone holders in the creel are loaded with the next yarn count. (*Warper running.*)



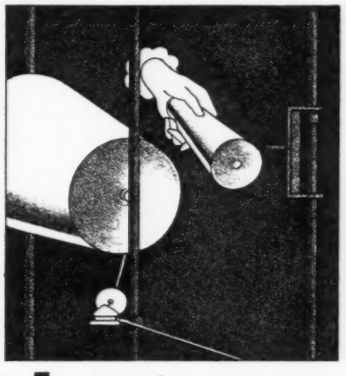
2. At the end of the last beam, the new cones are all in place. The warper tender now assists the creeler to change over. (*Warper stopped.*)



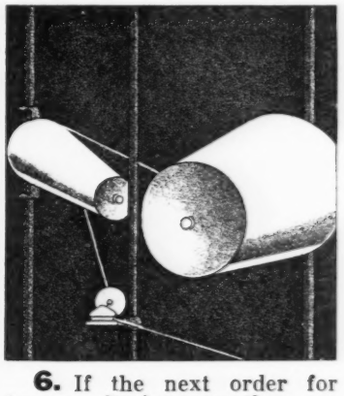
3. Each old cone is swung out, the end broken, and twisted over to the new cone. No knot-tying necessary. Productive time of warper increased. (*Warper stopped.*)



4. With the new cones swung into place, the twisted ends are drawn through the comb and drop wires. To prevent mixing counts, the old yarn is cut off. (*Warper stopped.*)



5. After the warper has started again, the creel tender unloads the old cones from the extra cone holders and prepares to reload with another count if necessary. (*Warper running.*)



6. If the next order for beams calls for more than one creeling, cones of the same count can be magazined and there are no stops for creeling throughout the entire order. (*Warper running.*)

EXAMPLE: The 4 lb. Universal Cone holds enough yarn for 3 or more full beams. For 20's yarn, each 4 lb. cone holds 67,200 yards; so each beam (30-inch head) will have about 21,000 yards per beam. With 450 ends, the beam will hold about 600 lbs. of warp yarn.

UNIVERSAL

IN 3 OUT OF 4 MILLS—More Net Return With the Universal System

WINDING COMPANY

BOSTON PROVIDENCE NEW YORK UTICA

SPRINGFIELD CHARLOTTE ATLANTA

2528

RAIN POSTPONES
ROYAL GARDEN PARTY
Hundreds of Debutantes
Disappointed
ELABORATE FROCKS RUINED
LONDON, July 22.—The first reception to be held by the King was cut short yesterday afternoon by a heavy shower.
Besides spoiling the King's first garden party, held on the grounds of Buckingham Palace, the rain worked great havoc with the light but elaborate costumes of hundreds who were waiting to be presented.
The debutantes, numbering about five hundred, waited for several hours to make their curtsies, and at the time the event was curtailed there were yet several hundred to be presented.

The news writes an ADVERTISEMENT for

*AQUAROL

BY ROYAL DECREE those debutantes should have been commanded to buy dresses made of Aquarol-treated fabrics. That would not have prevented postponement of the party, but it *would* have enabled them to curtsy the next day in gowns unharmed by rain and muddy splashes.

Consumers appreciate fabrics which can be worn without fear of ruin by sudden summer showers. Fabrics processed with Aquarol—

- Become Spot Resistant
- Fibre strength is increased
- Become Water-Repellent
- Color Fastness is improved

All viscose, acetate, wool, cotton, and silk fabrics receive these multiple benefits through a one-bath treatment with *Aquarol.*

*REG. U. S. PAT. OFF.

ARKANSAS CO·INC· 233 BROADWAY • NEW YORK

IF YOU CAN AFFORD TO IGNORE *ECONOMY*...

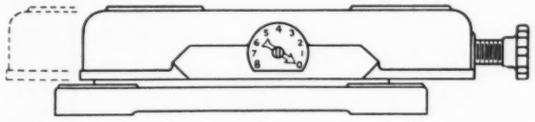
..then ignore this page!

To produce different products on the same machine, different speeds are required. Different speeds have required different drives, and the cost and delay of dismantling the old and buying and installing the new.

The Vari-Pitch Sheave, for Texrope V-Belt Drives, obsoletes all such procedure and its attendant expense and loss of time. This vitally important new development in power transmission permits, through a simple adjustment that takes but a few moments, a variation in speed of from 15 to 25% per sheave, and the minutest control of the variation within that range.

That means you can make a variety of different products on the same machines, some of which may require a higher speed, some a lower; and you can experiment with different speeds to see at just what speeds your machinery develops the highest efficiency.

Vari-Pitch Texrope Sheaves are made for stationary and motion control.



Straitline Automatic Ball-Bearing Motor Base developed for the motion control Vari-Pitch Sheave. You simply turn the hand wheel to alter the diameter of the sheave and simultaneously the base moves forward or backward to maintain proper belt tension. Write for Vari-Pitch Bulletin No. 1261.

Belts by Goodrich

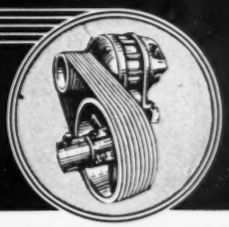
Vari-Pitch Sheave adjusted for maximum diameter-high speed.

15% TO 25% VARIATION IN SPEED

Vari-Pitch Sheave adjusted for minimum diameter-low speed.

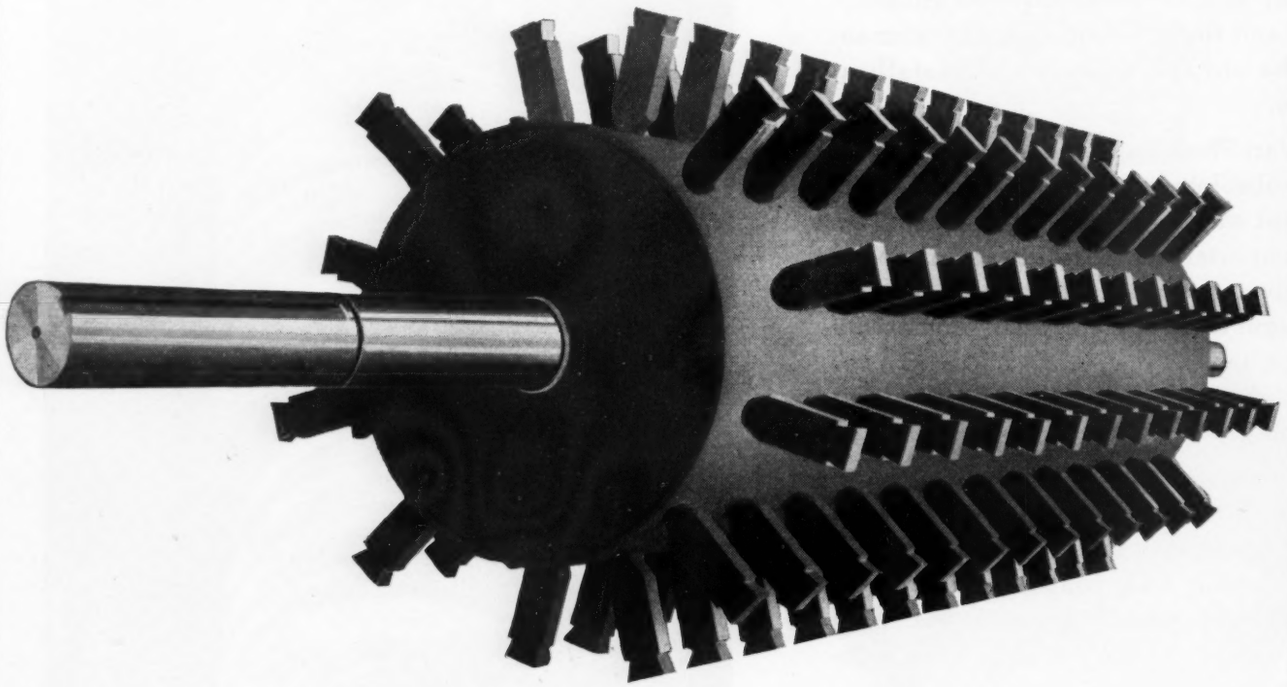
TEXROPE DIVISION

ALLIS·CHALMERS



MILWAUKEE WISCONSIN

The Aldrich "Multi-Blade" Beater



A RADICAL improvement on the well-known Aldrich Cylinder Beater which has been used for years in hundreds of pickers.

The strikers are twice as wide as in the old style beater and therefore overlap each other 50%. The ends of the strikers are under-cut to form a section exactly like that of a blade beater. This construction combines all of the advantages of the blade and Buckley beaters; gives better opening and more thorough cleaning, and forms a more even lap.

A number of these are now in service and this is unquestionably the best beater for use in breaker pickers or the breaker sections of single process pickers.

AldricH MachinE

Greenwood, **WorkS** South Carolina

DIAGEN* BLACK MR

(PATENTED)

Du Pont announces the addition of another new color to the range of stabilized azoic dyes.

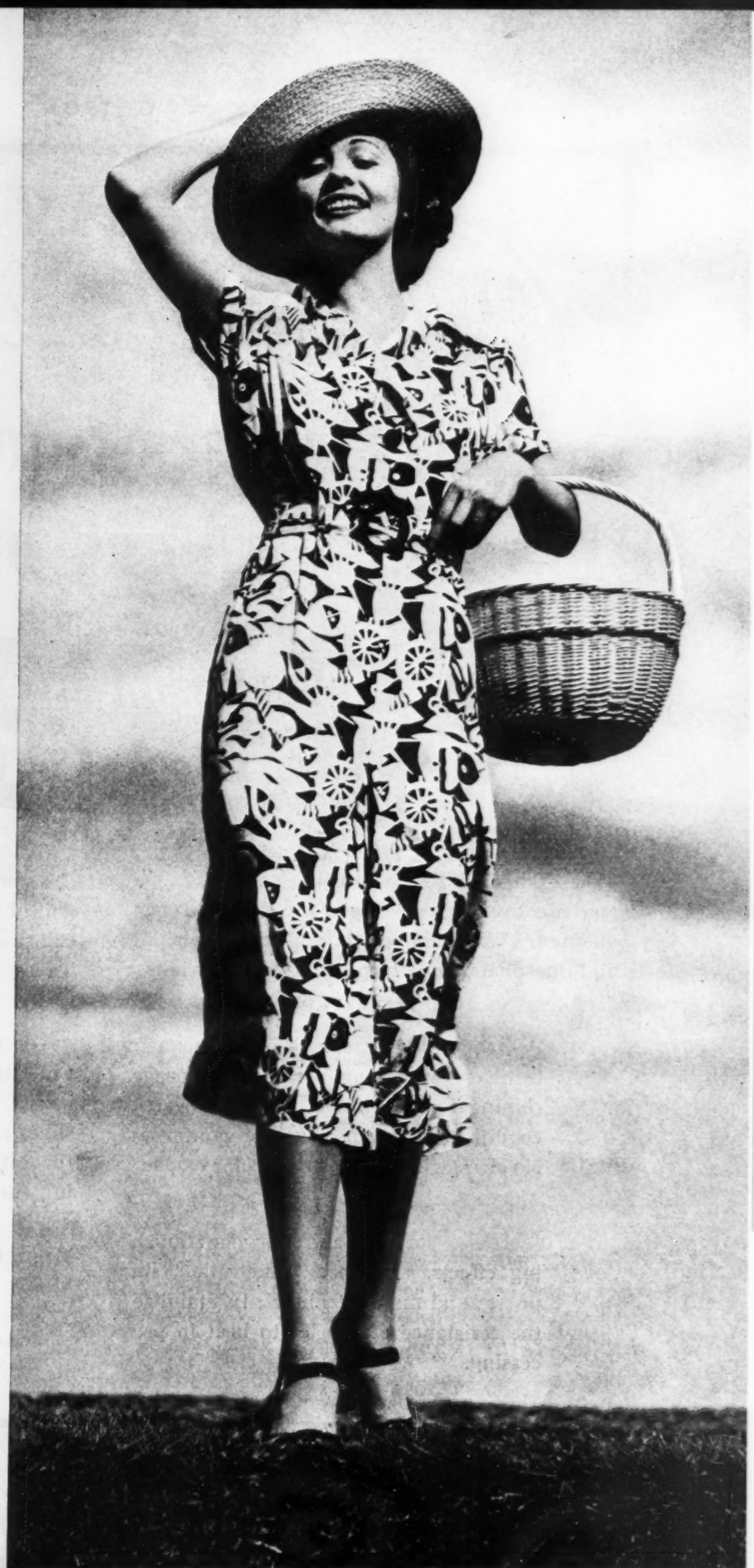
Diagen* Black MR (Patented) is a homogeneous black, particularly recommended for printing cotton. It is economical, readily soluble and possesses generally good fastness and working properties.

This product is redder in shade than the previously announced Diagen* Black DM (Patented). It will be found of interest as a self-shade for producing full blacks and also as a shading color for both browns and dark blues.

The physical properties are carefully controlled, thereby insuring a product of absolute uniformity.

*Reg. U. S. Pat. Off.

DU PONT DYESTUFFS
REG. U.S. PAT. OFF.



E. I. DU PONT DE NEMOURS & COMPANY, INC.
ORGANIC CHEMICALS DEPT. DYESTUFFS DIVISION
WILMINGTON DELAWARE

WHY *Phosphamizing* is the only PERMANENT CURE for RANCIDITY • ODORS • DISCOLORATION

It removes the cause .. OXIDATION!

The exclusive "Phosphamizing" process is the most effective ever developed for the control of oxidation. When applied to any Onyx Finishing Oil, "Phosphamizing" brings these added values:

1. Prevents oxidation and its subsequent troubles, over long periods in storage, shipment or shelf . . . despite severest conditions of temperature or dampness. No change in handle, body, color or odor.

2. Increases softness and improves finishing effects. Increases penetration, improves and maintains lubricity, stabilizes the resistance of fabrics to heat in processing.

Summed up, you get finer fabrics that are guaranteed to stay mill fresh indefinitely—as fresh in color, as fresh and free of odor as the day they leave your mill.

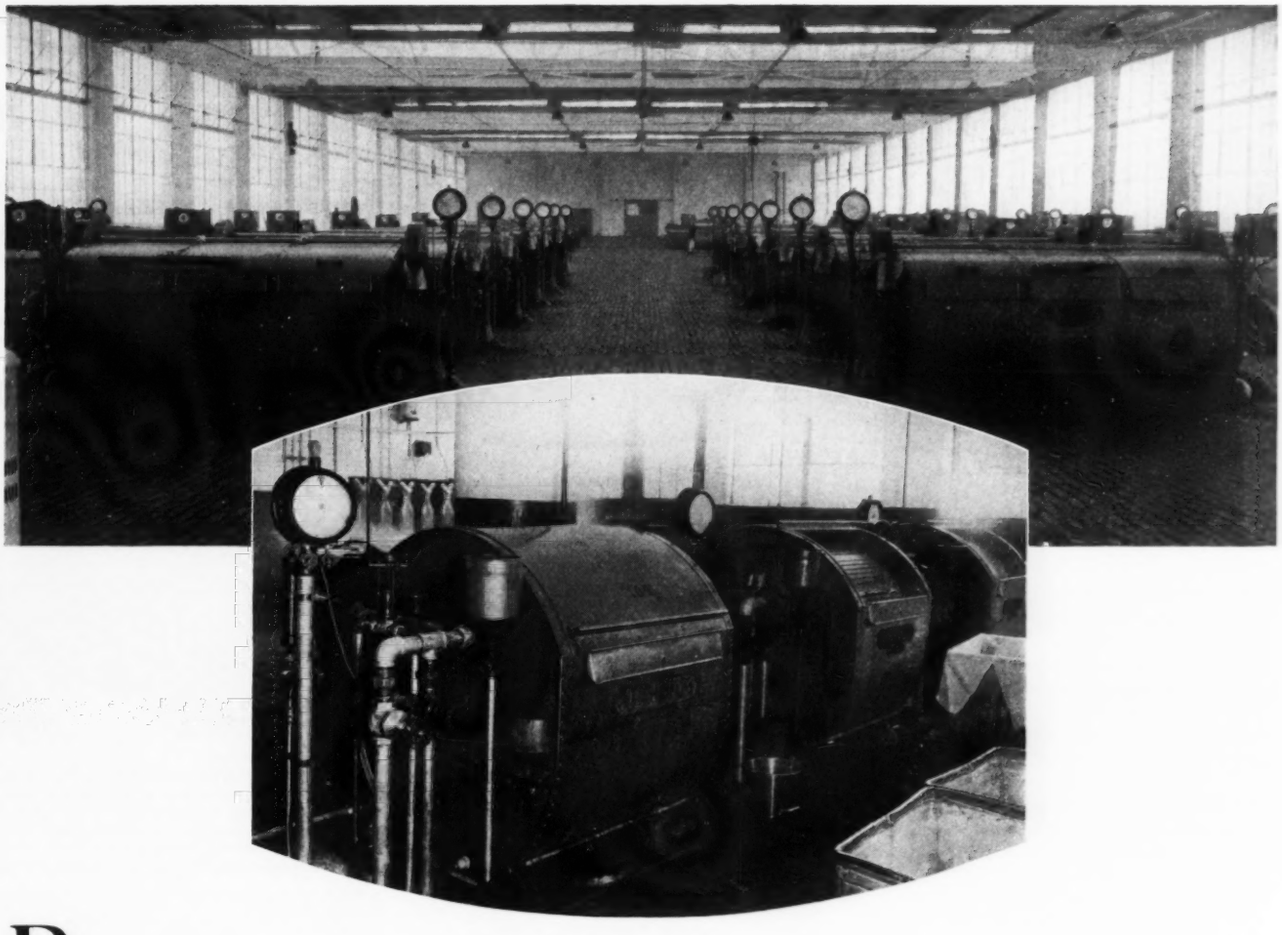
You may obtain any Onyx Finishing Oil "Phosphamized", on request only, at slight additional cost. Write for informative folder giving further details.

Onyx Oil & Chemical Co., Jersey City, N. J.

Specialists on Finishing Materials

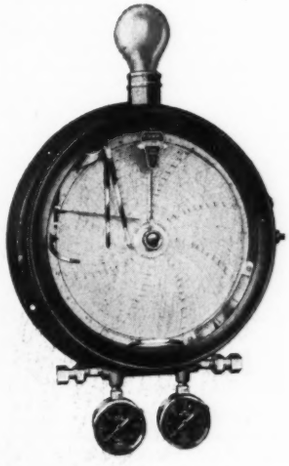
Southern Repr. E. W. Klumph, Charlotte, N. C.
Midw. Repr. Maher Color & Chemical Co., Inc., Chicago.
In Canada: Onyx Color & Chemical Co., Ltd., Montreal.

Phosphamized FINISHING OILS



Better Dyeing · Safer Dyeing · *Cheaper Dyeing*

with Foxboro Automatic Dyeing Temperature Controls



Foxboro Elapsed-Time Controller. Other types of Dyeing Controls to fit your specific conditions also are available.

Skein dyeing—raw stock dyeing—piece dyeing—package dyeing—hosiery dyeing, *all* textile dyeing depends for its success upon *temperature*. Because temperature is so important, the trend is definitely towards automatic control, to avoid the uncertainties of manual regulation.

Foxboro offers a complete line of instruments and controls for dyeing. The Elapsed-Time Recorder-Controller, shown at left and in photos above, holds the dye at correct temperature for a definite length of time, then cuts off the steam and flashes a signal light. Other mills are using simpler types of Foxboro control, to fit their particular problems.

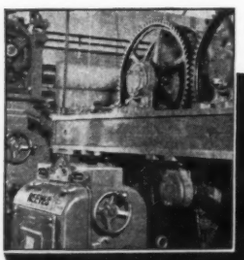
Why not get lined up for better—safer—cheaper dyeing? Call in a Foxboro engineer for a specific study of your conditions, or write for information.

THE FOXBORO COMPANY
18 Neponset Ave.,
Foxboro, Mass. U. S. A.

Atlanta Office: 161 Spring St. Bldg.
Branch Offices in 20 Principal Cities

FOXBORO
REG. U. S. PAT. OFF.

COMPLETE
TEXTILE MILL INSTRUMENTATION



Many different CONTROLS for use with REEVES VARIABLE SPEED TRANSMISSIONS

THE full value and advantages of variable speed control are based on the ease and accuracy with which speeds can be varied. Thus the *methods* of control are an important consideration in the application of variable speed regulation to textile machines.

In recognition of this, REEVES provides a number of different methods of control developed from experience in applying complete speed adjustability to all kinds of textile machines and processes.

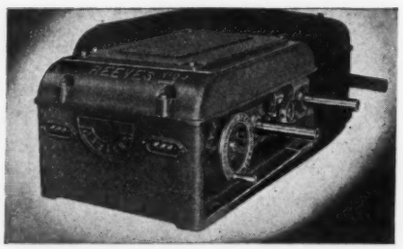
In the majority of applications, manual control as provided by the handwheel, hand crank or hand chain is entirely adequate.

When conditions require that speed changes be made by operators located away from the machine, REEVES provides Electric Remote Control with one or more push button stations located where most convenient.

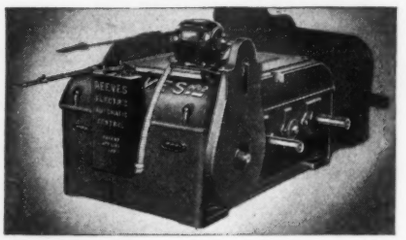
Many textile processes demand completely automatic control. For these processes REEVES provides four different types of automatic control: Electric, Mechanical, Hydraulic and Differential.

These forms of automatic control make possible perfect synchronization of different machines and separate sections of a single machine; maintenance of constant tension, uniform peripheral winding and unwinding speeds; uniform weight, temperature, and other variable elements.

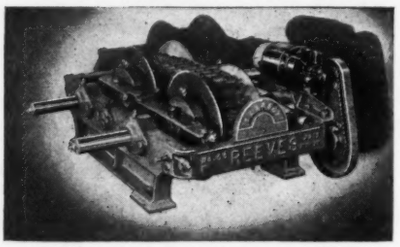
How can variable speed control bring new accuracy, speed and economies to the processes in your plants? And what method of control is best? Put these questions up to REEVES engineers. We shall be glad to make recommendations without any obligation on your part. Write us today.



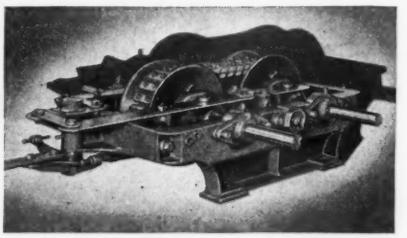
MANUAL CONTROL—by means of handwheel, mounted on either side of Transmission. Where it is necessary to locate Transmission on ceiling, on top or beneath machine or in any place 6 to 10 feet from operator's position—extended control is available through hand crank or through hand chain.



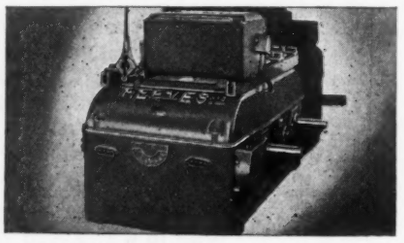
ELECTRIC AUTOMATIC CONTROL—connected and used in exactly the same way as Mechanical Control (below). Requires less mechanical energy for operation. Movable fulcrum is connected to extended lever, slightest movement of which is transmitted to switch energizing reversible pilot motor to increase or decrease speed.



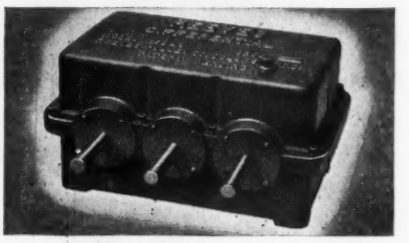
ELECTRIC REMOTE CONTROL—for use where operator's position is distant from Transmission. Fingertip pressure on "FAST" or "SLOW" push-button station controls speed changing mechanism of Transmission through reversible pilot motor. Any number of push-button stations, located where most convenient at any distance from the Transmission, may be used.



MECHANICAL AUTOMATIC CONTROL—an extended lever is attached by cable or chain to a floating roll, follower roll, pressure regulator, moving carriage or any other element from which indication of desired speed can be taken. Movement of lever changes position of shifting levers, discs and V-belt on Transmission, increasing or decreasing speed entirely automatically.



HYDRAULIC AUTOMATIC CONTROL—extremely sensitive, operates from negligible pressure and eliminates all "hunting". Movement of extended lever operates fluid motor through differential and pilot valve to increase or decrease speed of Transmission.



DIFFERENTIAL CONTROL—forms direct connection between driven machine or machines and speed changing screw of Transmission. Useful for constant velocity and constant tension control requirements, as well as synchronization of machine speeds, etc.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

(T-8-36)

Send, without obligation, material checked below:

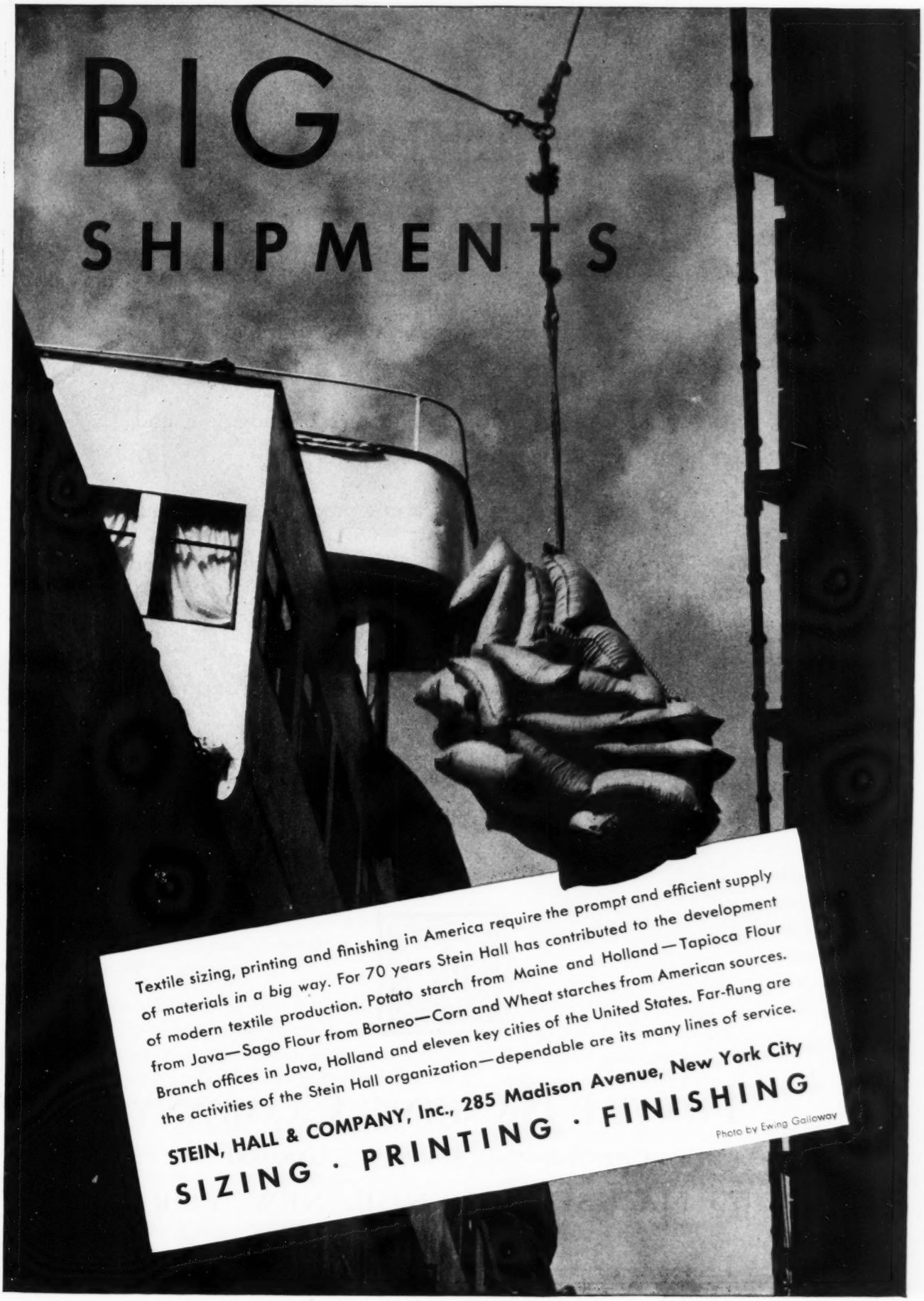
- ☐ Bulletin T-5640-A, describing Electric Remote Control for REEVES Variable Speed Transmissions.
- ☐ Catalog T-361, describing four types of REEVES Automatic Control.
- ☐ Speed Control Handbook, 112 pages of time-tested methods; engineering data.
- ☐ Catalog M-363, describing new REEVES Vari-Speed Motodrive.

Name .....

Company .....

Address .....

City ..... *State* .....



Textile sizing, printing and finishing in America require the prompt and efficient supply of materials in a big way. For 70 years Stein Hall has contributed to the development of modern textile production. Potato starch from Maine and Holland—Tapioca Flour from Java—Sago Flour from Borneo—Corn and Wheat starches from American sources. Branch offices in Java, Holland and eleven key cities of the United States. Far-flung are the activities of the Stein Hall organization—dependable are its many lines of service.

STEIN, HALL & COMPANY, Inc., 285 Madison Avenue, New York City

SIZING · PRINTING · FINISHING

Photo by Ewing Galloway

85,000 CREDIT FILES

FOR TEXTILE MILLS

Our records contain complete credit information on more than 85,000 customers of textile mills.

Think what this means in intelligence of judgment and rapidity of decision on credit requirements.

Think what it means in creating more sales for you.

The information we possess frequently permits larger shipments than you could possibly make without it--and more shipments mean more profit for you.

We have information right now on most of the customers to whom you sell--*or wish to sell.*

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The Diversified Textile South

It is a generally known fact that cotton manufacturing has made tremendous strides in the South and that today the greater portion of all cotton manufacturing is done in the Southern territory.

However, there are facts about other branches of the Southern textile industry that are not so generally known.

FOR INSTANCE:

- Dyeing and finishing in the South have made such great strides that today well over 75% of all goods manufactured in this territory are made ready for consumption by Southern plants.
- Over 64% of all seamless knitting machines are now located in the South.
- Of a gain of 3,496 full-fashioned machines from 1929 to 1935 in the United States, 2,093 or 60% were in the South.
- The large majority of rayon yarn is produced in the Southern states and last year 42.5% of all rayon weaving yarn consumed in the United States was used by Southern mills.
- While the manufacture of silk and woolen goods in the South has been a more recent development, over 225 Southern mills are now consuming silk and over 70 mills are consuming wool.

—o—

The OCTOBER SOUTHERN TEXTILE DIVERSIFICATION NUMBER

In its October Southern Textile Diversification Number, COTTON will trace and interpret the development of each branch of the industry in the South. Leading articles by authorities in their respective fields portraying the progress being made will make this issue of interest and value to all connected with the textile industry.

Advertising forms close September 20th. Manufacturers serving the textile mills will want to make space reservations early.

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1020 Grant Building *(Serving the Textile Industries)* Atlanta, Georgia

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HYATT

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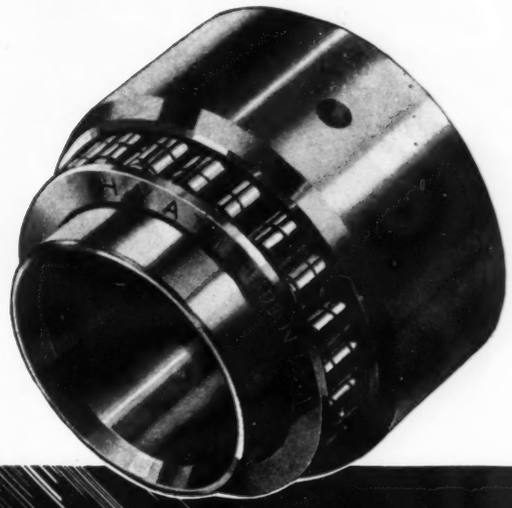

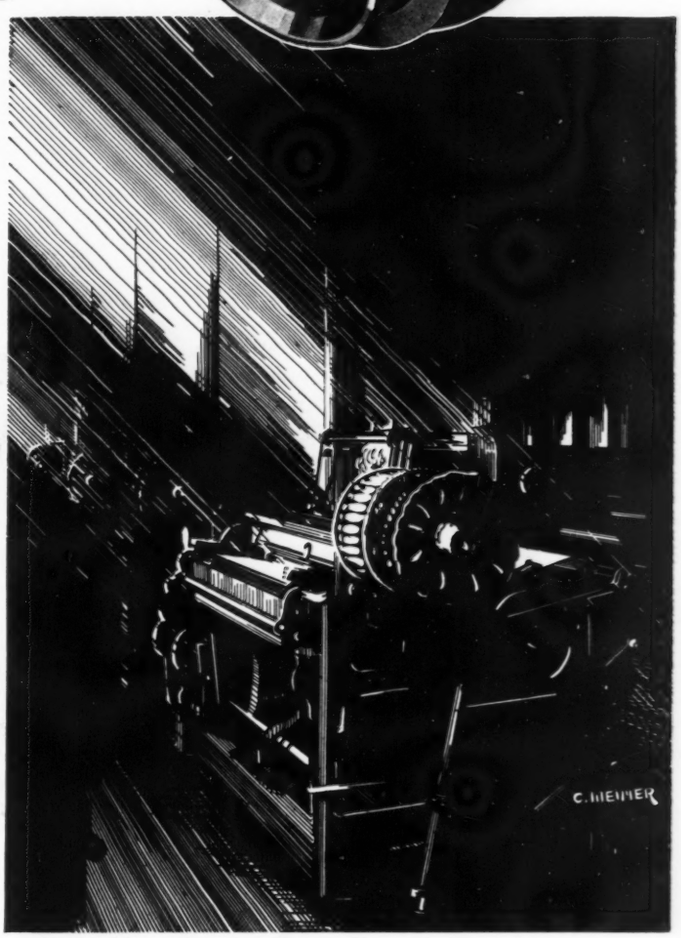

• In a great many textile machines Hyatt Roller Bearings are standard equipment. The number of such installations is increasing every year because mill operators and machine builders know that Hyatt Roller Bearings help to keep down upkeep, add to perfect operation of the machine, and help increase the quality and output of the product.

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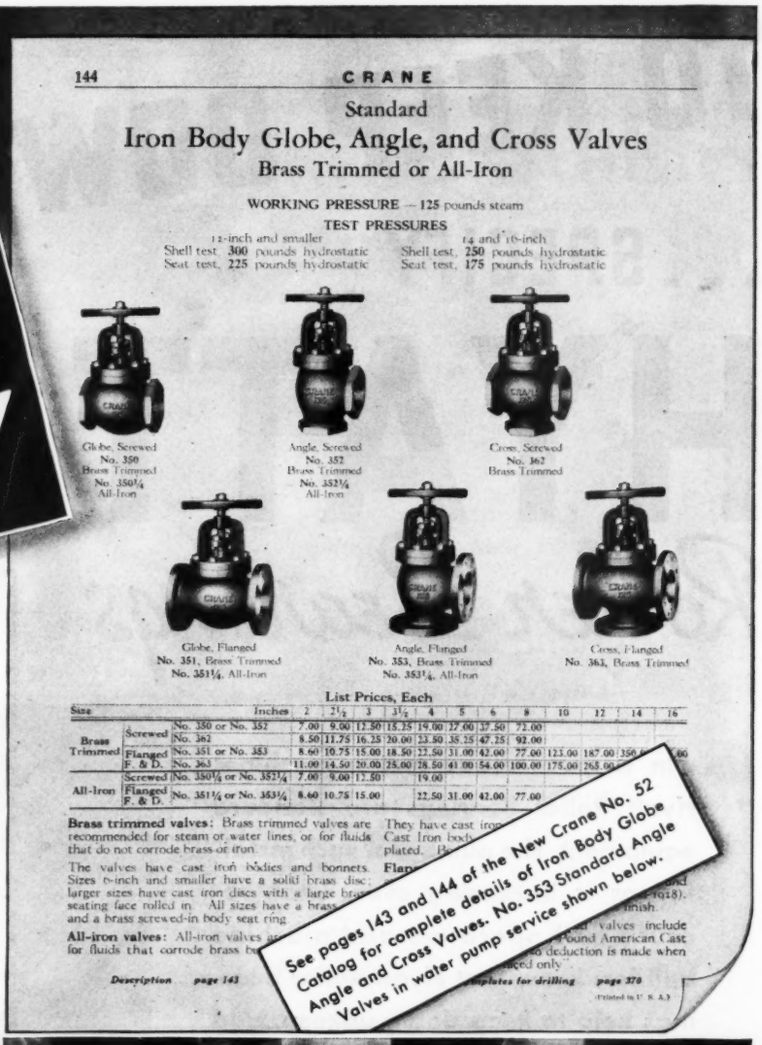
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		No. 362		8.50	11.75	16.25	20.00	23.50	35.25	47.25	92.00				
	Flanged F. & D.	No. 351 or No. 353		8.60	10.75	15.00	18.50	22.50	31.00	42.00	77.00	123.00	187.00	350.00	[illegible]
		No. 363		11.00	14.50	20.00	25.00	28.50	41.00	54.00	100.00	175.00	265.00		
All-Iron	Screwed	No. 350¼ or No. 352¼		7.00	9.00	12.50		19.00							
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All-iron valves: All-iron valves are [illegible] for fluids that corrode brass but

They have cast iron [illegible] Cast Iron body [illegible] plated. Br[illegible]

Flan[illegible]

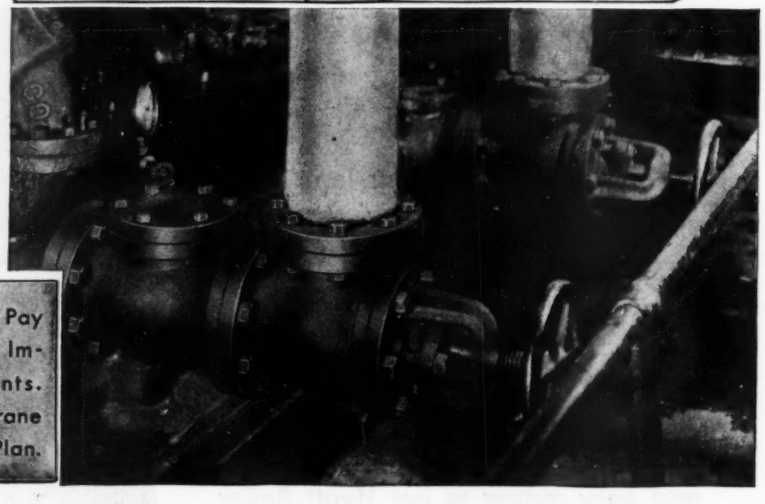
[illegible] finish.

[illegible] Valves include [illegible] Pound American Cast [illegible] deduction is made when [illegible] ced only.

Description page 143 *[illegible] plates for drilling page 370*

(Printed in U. S. A.)

See pages 143 and 144 of the New Crane No. 52 Catalog for complete details of Iron Body Globe Angle and Cross Valves. No. 353 Standard Angle Valves in water pump service shown below.



●The real cost of a valve is not measured by its purchase price but by its total cost during its life. Excessive attention, leaks, repairs and actual shut-downs of equipment considered individually may appear trivial. But their cumulative cost for a half year or a year, may exceed the purchase price of a valve which would have eliminated such annoyances, required only minimum maintenance.

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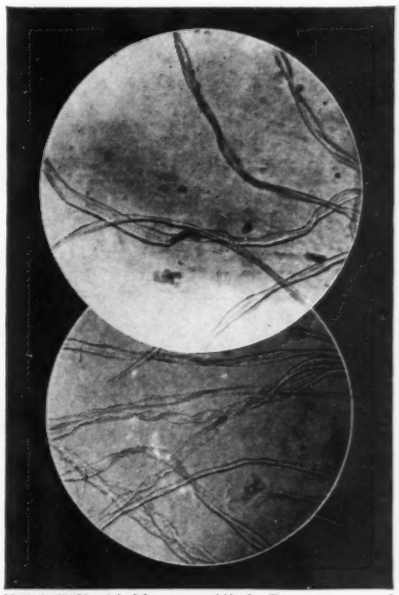
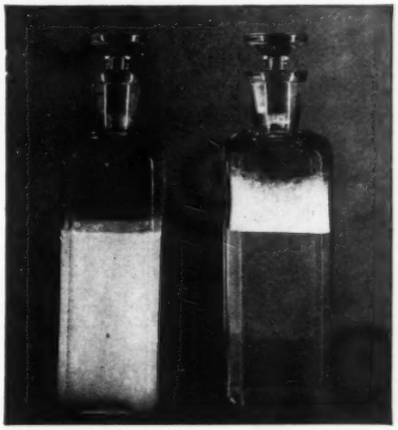
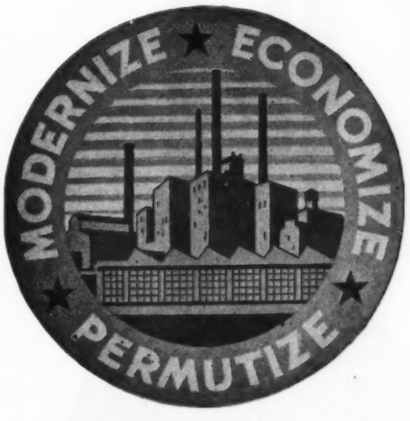
A very interesting booklet, "Reducing Textile Costs and Troubles," is yours, without obligation. Write for a copy.



COTTON FIBRES—*highly magnified. Top, processed in Soft Water; lower picture, processed in Hard Water.*



TRY THIS SIMPLE TEST *Add a few chips of good soap to a bottle of water. Shake it up, and look at the water under the suds. If it is cloudy, the water may cause trouble in textile processing.*



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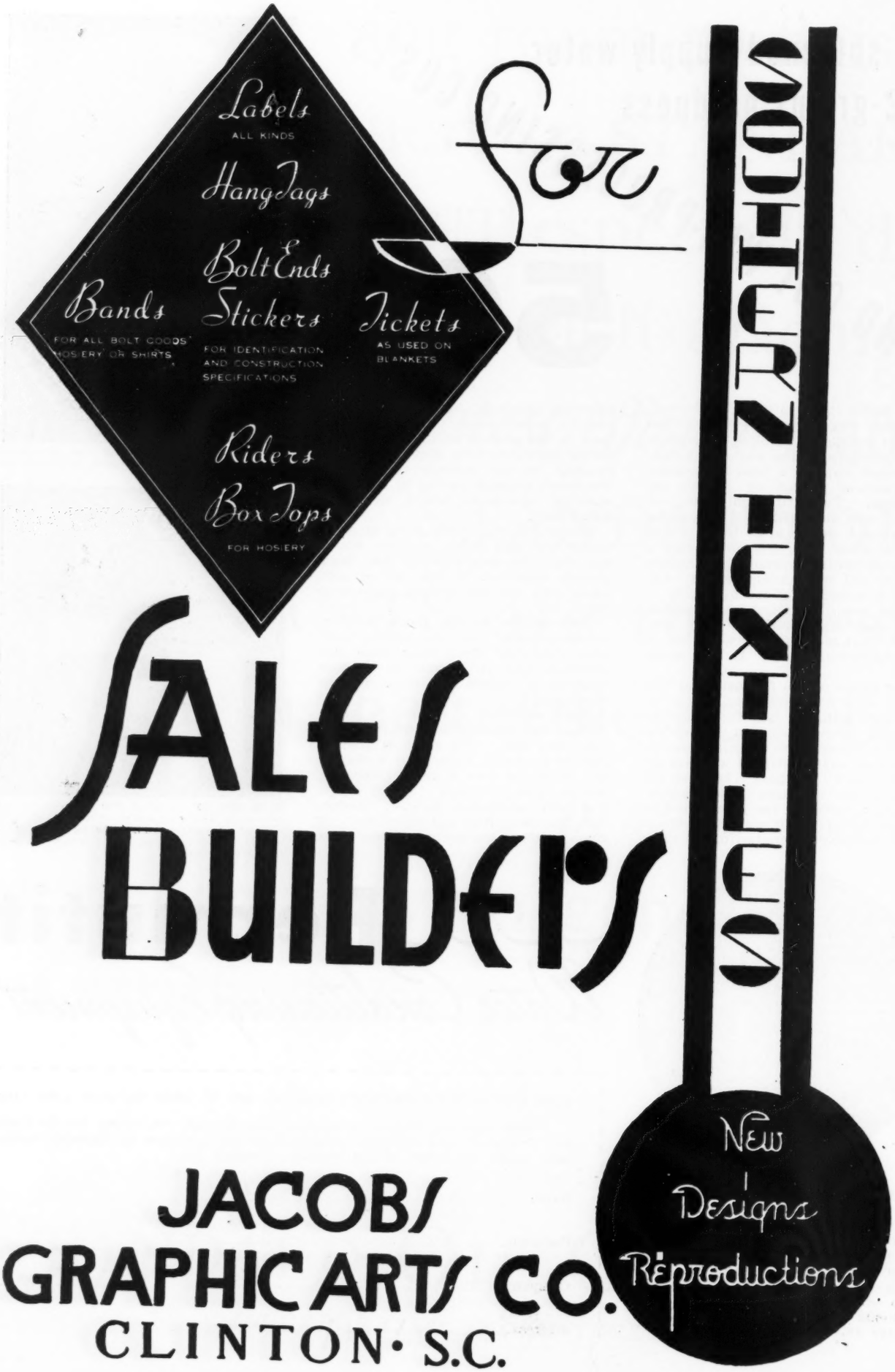
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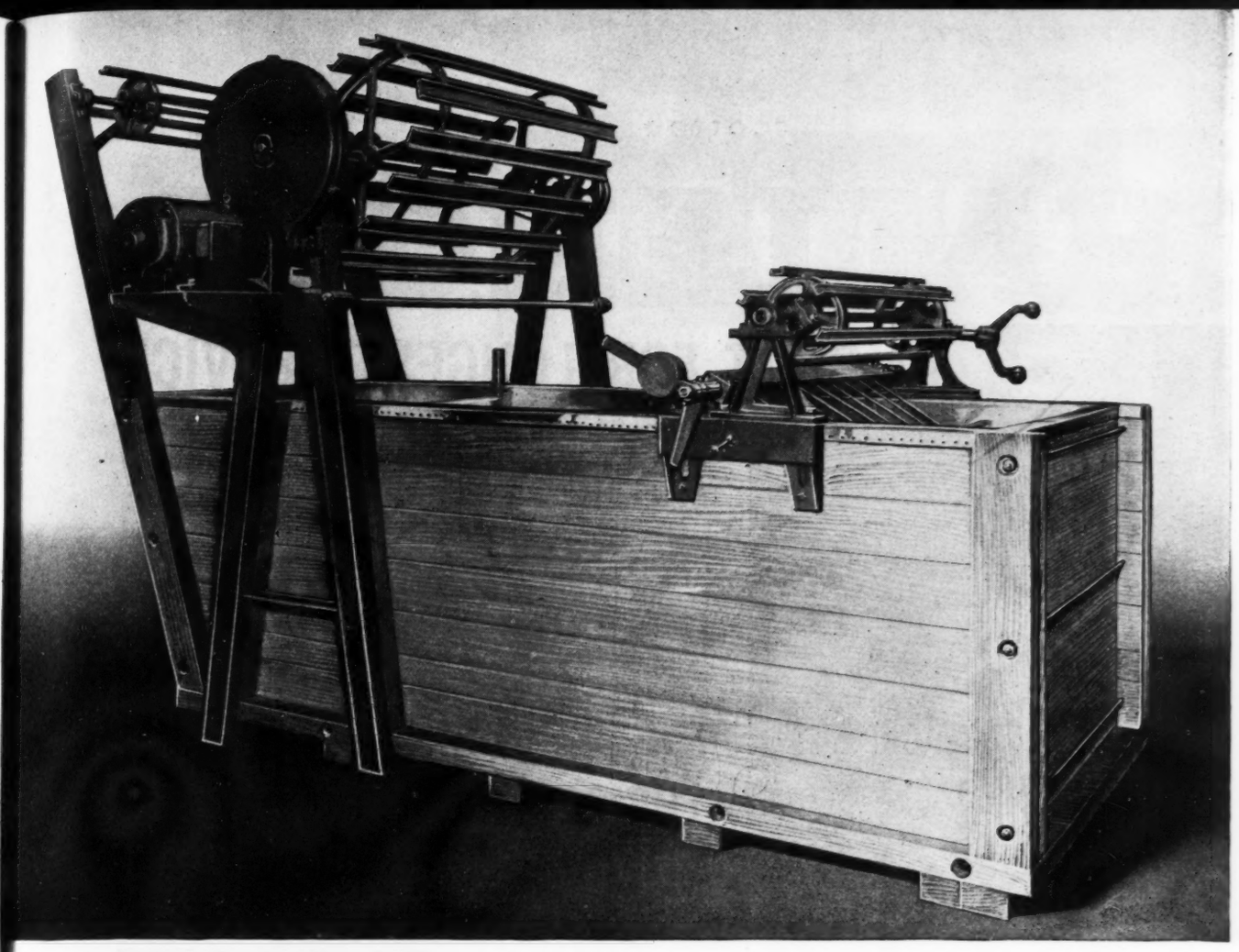

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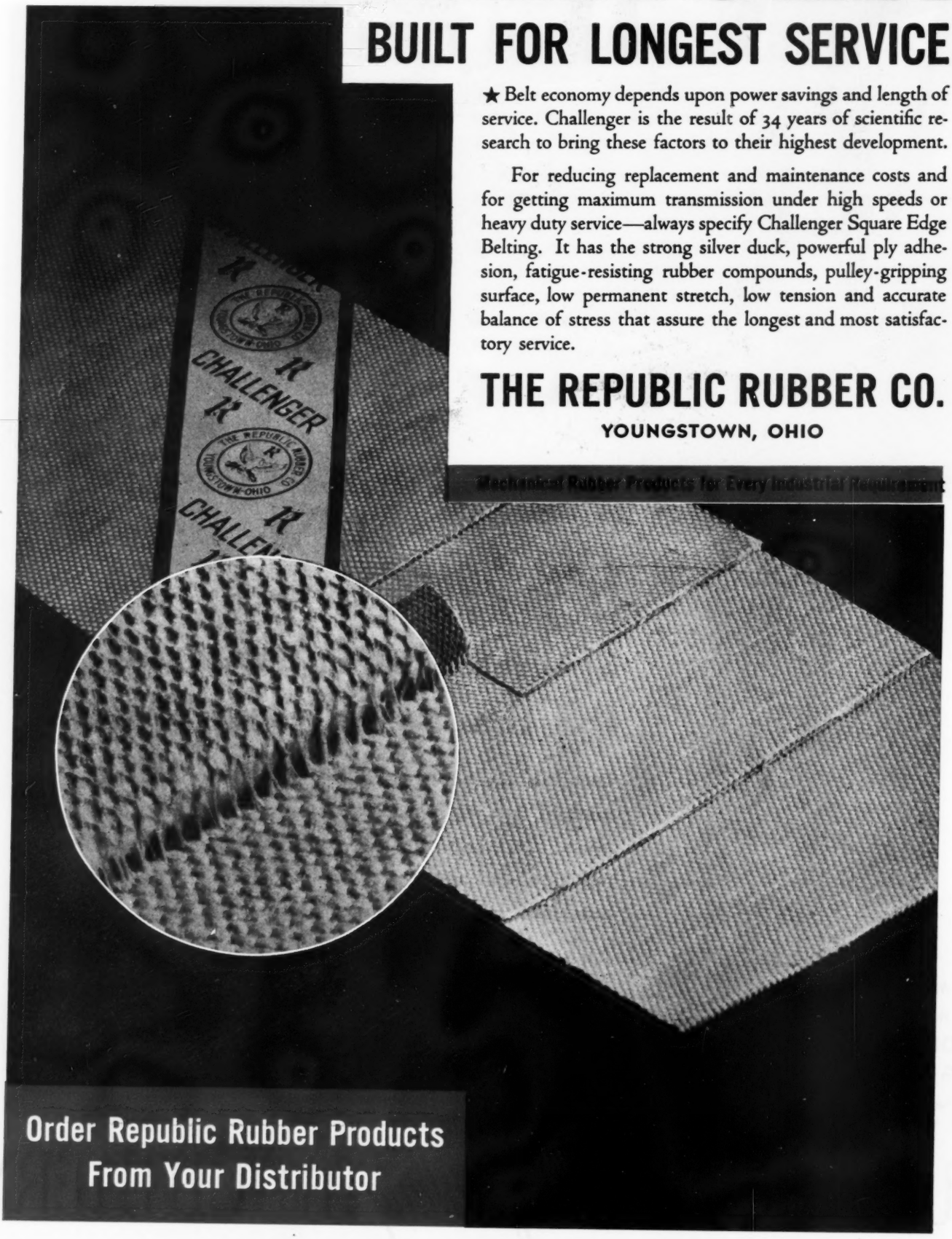

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COTTON

Vol. 100 AUGUST, 1936 No. 8

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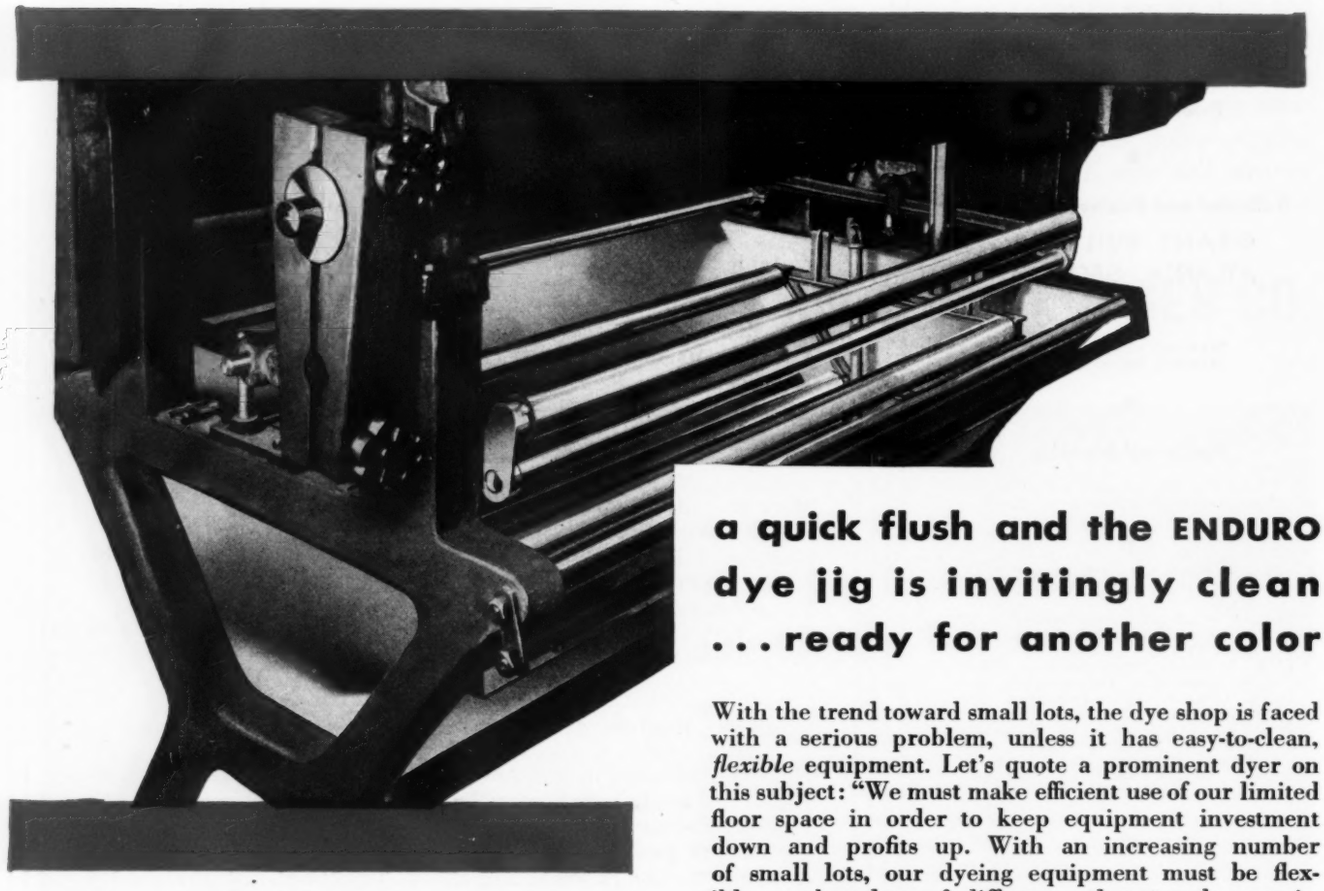

a quick flush and the ENDURO dye jig is invitingly clean . . . ready for another color

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Vol. 100
No. 8

COTTON

August,
1936

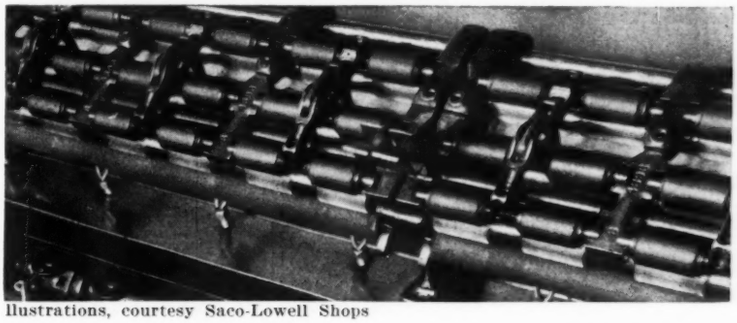
Comments on Roll Spacings for Drawing—Fly Frames—Spinning

By J. Wolfinden

A TEXTILE ENGINEER gives his experience on roll settings in carding and spinning. He considers the bulk of the fibers and the twist in the roving of great importance, along with staple length, and tells why. He tells why he likes a short slubber draft, and gives other practical recommendations, including a table of roll setting allowances, and a lay-out for 1-inch Middling cotton. Be sure to file this article for further reference . .

I BELIEVE the readers of COTTON will be interested to read another man's opinion on roll spacings. Roll spacings are important, we all know, and they must be right to obtain good yarn and good running work. For this reason, I am making it my business to bring this subject up again.

The trouble with a great many mill men is that they consider only the staple of the cotton in determining the proper roll spacing. There are other limitations that are as important as the staple, but are seldom mentioned. I feel that the length of the staple is the least of our worries because we know what that is. From my experiences I find that many mills would obtain better results if they allowed for the bulk of fibers passing through the rolls and the amount of twist in the roving when spacing the rolls.



Illustrations, courtesy Saco-Lowell Shops

When I speak of bulk affecting the roll spacing I do not mean that you multiply the weight of one end by the number of ends fed. This would be entirely wrong because the ends are side by side and not piled one on top of the other. Therefore, the number of ends fed does not have any bearing on what I term the bulk fed.

Some time ago I made a series of tests on roll spacings and found that different weights of stock or bulks of fibers between the rolls and different twists in the roving required a change in the roll spacings. If a 70-grain sliver is being run, the distance between the centers of the rolls should be greater than when running a 50-grain sliver, and the same applies to hank roving and yarn. This is due to the fact that not only the fibers directly in contact with the bite of the rolls are being drawn, but the surrounding ones are acted upon also. For this reason I make allowances in the roll spacings for different weights or bulk of fibers and twist in the stock being drafted, and I get evener yarn by doing so.

Some mills running short staple cotton find it difficult to obtain the proper roll spacing on their drawing frames because their roll diameters are too large or the roll stands are not adapted for short cotton. Where this is the case the mill will always have uneven yarn, because if it leaves the drawing frames uneven, you can be sure that it will go worse instead of better in the later processes.

On the slubbers I also get better results by making allowances for the bulk of fibers. Very few overseers stop to realize that generally there is more bulk between the rolls on the slubber than on the drawing frames. On the roving frames, I find that allowances have to be made for the amount of twist in the back roving rather than the bulk between the rolls. It is customary to space the rolls over the staple of the cotton varying from 3/8-inch to 1/16-inch at the various processes. The wider allowances should be in the earlier process and reduced proportionately at each process along the line.

Front and second roll spacing: The general practice is to make the following allowances over the staple of the cotton: 3/8-inch for sliver and ribbon lappers; 1/4-inch for combers; 3/16-inch for drawing frames;

5/32-inch for slubbers; ⅛-inch for intermediates; 3/32-inch for second intermediates; 1/16-inch for fine and jack frames; and as close as possible to the staples of the cotton on the spinning frames.

Intermediate and back roll spacing: On sliver lappers, ribbon lappers, combers, and drawing frames: Space the second to third rolls ⅛-inch wider than the front to second rolls, and the third to back 3/16-inch wider than the second to third. On fly frames, with cotton 1-inch to 1¼-inch staple, a good standard spacing for the second to back rolls is 1½-inch between centers.

These allowances are only a guide to work from when spacing rolls, but are by no means a set standard. The general practice is to experiment with various spacings until we find the one best adapted for any particular cotton and machinery.

The following roll spacing table gives the approximate allowances over the staple of the cotton between the front and second rolls including back stocks and drafts. These allowances will give good results assuming a moderate twist is used in the roving:

APPROXIMATE ROLL SETTING TABLE

(Allowances over the staple of the cotton)

Drawing Frames

Weight Sliver	Roll Spacing Allow.	Draft
80	3/8″	6
70	1/4″	6
60	3/16″	6
50	5/32″	6
40	9/64″	6

Slubber—12x6—11x5½

Weight Sliver	Roll Spacing Allow.	Draft	Hank Range
80 to 70	3/8″	3.36	.35 to .40
71 to 60	1/4″	3.5 to 3.6	.41 to .50
61 to 50	3/16″	3.74 to 3.6	.51 to .60
51 to 40	5/32″	3.74 to 3.38	.61 to .70

Intermediates—10x5—9x4½

Hank Back Stock	Roll Spacing Allow.	Draft	Hank Range
.35 to .40	1/4″	4.5	.79 to .90
.41 to .50	3/16″	4.80	1.10 to 1.20
.51 to .60	5/32″	5.00	1.27 to 1.50
.61 to .70	9/64″	5.20	1.58 to 1.89

8x4—4x3½

Hank Back Stock	Roll Spacing Allow.	Draft	Hank Range
.79 to .90	3/16″	5.2	2.05 to 2.34
1.10 to 1.20	1/8″	5.5	3.03 to 3.30
1.27 to 1.50	3/32″	6.0	3.62 to 4.50
1.58 to 1.89	5/64″	6.5	5.15 to 6.15

6x3—5x2½

Hank Back Stock	Roll Spacing Allow.	Draft	Hank Range
2.05 to 2.34	1/8″	5.5	5.60 to 6.45
3.03 to 3.30	7/64″	5.7	8.65 to 9.40
3.62 to 4.50	3/32″	6.0	10.88 to 13.50
5.15 to 6.15	5/64″	6.2	15.95 to 19.00

Top Roll Adjustments

Adjust the top rolls over the center of the bottom steel rolls in the following manner: Back top roll, 1/64-inch; middle top roll, 1/32-inch; and front top roll, 3/64-inch. The top rolls should of course revolve these distances in front of the top center of the bottom steel rolls.

Always adjust the top rolls with a cap bar neb gauge, because there is generally a variation in the diameter of the top rolls, even if they are newly covered. A cap bar neb gauge can be secured from the machinery firms. It is a gauge that fits against the front roll and lies flat on the three lines of rolls. It has three studs—one for each cap bar neb—and the studs can be adjusted to the roll spacings required. Worn stands and cap bars cause mills a lot of grief if they are tolerated. Rolls should be re-set at least twice a year, and the frame should be checked for line and level at this time. Sometimes the frames are out of line and level slightly, but if corrected in time wear on the rolls and stands may be prevented.

Spinning frame roll spacings should be checked as follows: If the rolls are spaced properly on the spinning frame, slight cockles will appear on the yarn when the frame is run at half speed; these should disappear when the frame is running normal. By "cockle", I refer to the one that occurs when the rolls are spaced too close to the staple of the cotton at any speed. The general practice is that when a spinner sees this cockle he opens his rolls. A cockle is caused when some fibers are in the bite of the front rolls before they have been released properly, and a slight hesitation occurs. While this is taking place, the twist runs up into the bite of the roll, making cockles. By applying a pulling motion on the yarn at both sides of the cockle it can be drawn out, but there is not enough tension on the yarn in the later process to draw out a cockle and occasionally mills are troubled with them when a bale of longer staple cotton gets in the mixing.

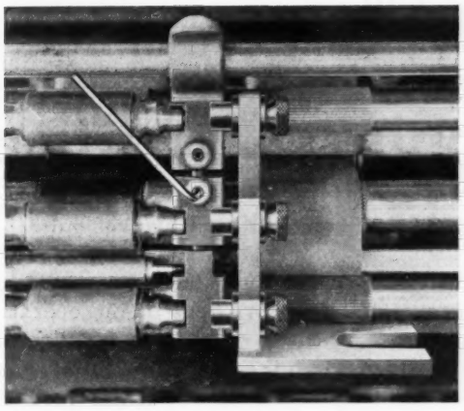
Lay-Out for Sheetings

While I realize that conditions vary in different mills, I would like to give now my idea of good roll spacings, break drafts and twist multipliers for 1-inch staple, Middling grade, for carded sheetings, and follow the list with some comments.

ROLL SPACINGS FOR 1-INCH MIDDLING COTTON

	Break Drafts	Twist Multiples
Drawing Frames, Breaker and Finisher:		
6.00 draft; 60-grain sliver fed; 60-grain sliver delivered	Web, 1.08	
Front to second, 1 3/16-inch center to center	Front, 3.05	
Second to third, 1 5/16-inch center to center	2nd, 1.50	
Third to fourth, 1 1/2-inch center to center	Back, 1.20	
Slubbers:		
3.6 draft; 60-grain sliver; .50-hank roving		
Front to second, 1 3/16-inch center to center		
Second to back, 1 1/2-inch center to center	1.05	1.2
Intermediates:		
5.00 draft; 1.25-hank roving		
Front to second, 1 5/32-inch center to center		
Second to back, 1 1/2-inch center to center	1.08	1.25
7x3 and 8x4:		
5.75 draft; 3.60-hank roving		
Front to second, 1 3/32-inch center to center		
Second to back, 1 1/2-inch center to center	1.1	1.33
Spinning, Regular Draft, Weighted Rolls:		
12.2 to 12.7 draft; 22s and 23s yarn		
Front to second, 1 1/16-inch		4.60W
Second to back, standard	1.15	3.80F

Now for the comments. As to the drawing frames, I have read many articles along the line of break drafts, have tried every imaginable combina-



A cap bar neb gauge for accurate determination of roller settings . .

tion of drafts, and finally found that for a total draft of 6.00, the lay-out given in intermediate break drafts produces the smoothest appearing web. If a total draft of 5.00 was required, I would change the intermediate double carrier gear driving the second roll to give the following drafts: 1.08, 2.56, 1.50, and 1.20. We must be very careful of over-drafting between the second and third, and the third and back rolls, or cloudy webs result. A cloudy appearing web can generally be traced to too long a change draft and back break draft, mainly due to the variation in the individual ends of sliver fed. The heavier ends of the sliver at the back rolls are held firmly, allowing the lighter ones to draw unevenly. We get the same effect between the second and third rolls, so the longer we draft between these rolls, the chances are we make cloudy work. As the sliver comes in contact with the back rolls it is in cable form and only the center fibers are held firmly; the outside fibers are floating along with the others. As a result, a long break draft naturally has a tendency to draw the floating fibers unevenly and uneven work results. After we have prepared the sliver into a thin sheet as it is at the second rolls, we are able to draft longer because the fibers are held firmer at this point.

I am a believer of all standard change gears on the drawing frames. I size twice daily, change if necessary but only temporarily until I can find the cause of the sudden change in weight, and after correcting I get back to standard gears again. When our drawing frame weights are varying all over the lot the trouble is generally due to the cotton mixing or variation in the picker laps.

Every time we change the draft gear we affect the draft between the second and third rolls. If we make extreme draft gear changes, uneven work results.

Fly Frame Break Drafts and Gearing

After many experiments on the fly frame break drafts, I found that the required break draft depends greatly on the back roll spacing and the twist in the roving. More twist in the roving requires a wider roll spacing and a slight increase in the break draft. This is the reason why there are so many different opinions as to the proper break draft for the fly frames. I would not think of specifying a break draft without specifying the roll spacings and the twist per inch in the back stock.

It is not good practice to run a long break draft on the slubbers. Excessive break draft is not essential as there is no twist in the sliver, so it is only necessary to condense the fibers that are in cable form to a flat mass of fibers so that they will be held uniformly where the main drafting takes place.

On the intermediates, fine and spinning frames, the fibers are in cable form also, but they are twisted together. This twist binds the outside fibers to the fibers that are held in the bite of the rolls, and as we increase the twist and decrease the percentage of fibers in contact with the drafting points, a slightly longer break draft can be applied proportionately at each process along the line.

GEARS ON FLY FRAMES

	12x6— 11x5½	10x5— 9x4½	8x4— 7x3	6x3— 5x2½	
Back Roll Gear	24T	26T	28T	25T	
Break Draft	1.04	1.08	1.12	1.13	
Second Roll Gear	23T	24T	25T		22T
Distance, Back and Middle Roll	1"	1"	1"	1"	

It is not necessary to use the combination of gears specified as other combinations will give the same result. The break draft is figured as follows:

Example: Back roll gear 24T ÷ Middle roll gear 23T = Break draft 1.04.

Study of Basic Markets

A new statistical study recording the location and density of the textile industries of the United States by counties has been made available by the Bureau of Foreign and Domestic Commerce, Department of Commerce, Washington.

The Bureau has found that one of the problems constantly harassing industrial marketing executives is the inability to get an accurate visual picture of the markets in which they operate. Failure to have such information often leads to serious errors in both sales planning and promotion, with a consequent high marketing cost.

In an effort to be of direct aid in helping toward the establishment of more effective and economical market practice, the Bureau of Foreign and Domestic Commerce has undertaken to produce a series of experimental studies showing in concise, visual form the present major markets for industrial machinery, equipment, and supplies.

The study of the American textile markets, which is the first study made available in the series, records the location of approximately 98 per cent of the textile industries of the country by counties. The study includes a series of six maps showing separately the distribution of the cotton, woolen and worsted, silk and rayon, and knitting industries, and a summary map of the entire textile industry. In addition, the study includes census statistical data covering the number of establishments, wage earners, wages, value of products, and separate tables showing in detail the quantity of each type of machinery in place, by counties.

This publication should be of basic value to marketing executives, advertising agencies, etc.

The full title of the publication is "Basic Industrial Markets in the United States—The Textile Industries". Market Research Series No. 14.1. The price is ten cents per copy.

Description of a Modern Blanket Mill's

Cloth Room and Shipping Department

By John D. Fuller

THE TIME has come (the walrus said) to speak of other things, of ships and shoes and now of cloth rooms. At this time we bring you a discussion of one department that receives less attention, in some mills, than even the shrubbery around the mill office. The author of this article carries the reader through a modern cloth room and shipping department of a large blanket mill. By carefully reading this story, you may find methods of cutting cost and eliminating costly errors in your own cloth room.—The Editor.

VERY OFTEN, the cloth room in a mill is the forgotten factor in cost, production, quality, and performance. Most mills consider the installation of single-process picking as essential, do not hesitate to admit the advantages of long draft spinning, and know the value of the high-speed loom. Practical problems of the card room are discussed and efforts are made to find short cuts in the weave shed, for example, but rarely is a thought given the room where the finished product is inspected, packed and shipped. The progressive mill must look to the cloth room and shipping department for production and costs, and must realize that modernization is just as essential here as in any of the other production departments of a mill.

We should also consider that the cloth room has the opportunity to aid in the reduction of seconds in the weave room by prompt notification of looms that are making seconds.

With these thoughts in mind, we will take you through a modern cloth room and shipping department of a prominent southern blanket mill.

The rolls of blanket cloth are brought directly from the weave room and stacked so that the ends of the rolls may be convenient to the operative. A singer scrapes as much of the loose filling threads from the end of the roll as he can with his comb, and then using his torch and a brush, he burns the remaining ends of filling as close to the selvage as possible. It is necessary to comb much of the hanging filling off before singeing or the whole end of the roll of cloth may flare up when the torch is applied. This roll is then run over the inspection table where slugs, etc., are removed just as in any other cloth room. The inspector has a record sheet beside her and as each bad place is found, it is tabulated.

Weave Room Notified of Seconds Immediately

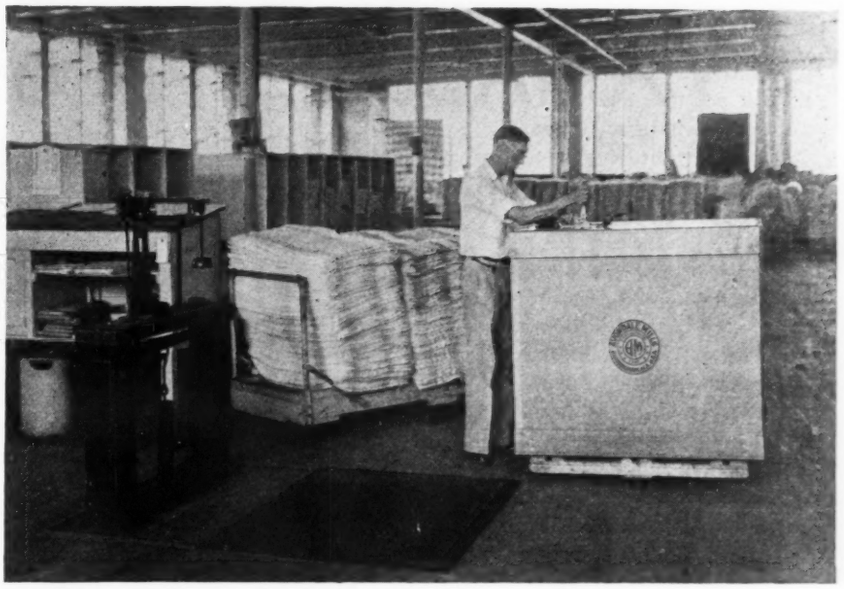
Such defects as slugs, oil, holes, mixed filling, jerked-in filling, etc., are recorded. When a cut of cloth has too many imperfections, it is reported to the cloth room overseer who promptly notifies the weave room overseer that the loom on which the defect was made is out of fix. In this way the loom fixer may catch the trouble long before the cloth is shown to the weaver and before the loom has had time to do much further damage.

As to the inspection of the blankets, they are gone over three times for imperfections, once on the unfinished goods, once at the cutting table, and again at the point of packing.

Cuts 5,000 Singles a Day

After the unfinished cloth is inspected, it is sent to the napper, where it is napped for the required number of runs. Then it is brought back to the cloth room, run over a table, graded, and cut into blankets of the proper size. Three girls work at this table, one who grades the goods as they pass by and two who cut them with an automatic knife. This knife, driven by a small motor, has greatly reduced the previous cost of cutting. Whereas the work formerly

Left, the bright, airy room where the blankets are inspected, cut to length and stitched . . . .



Ready for the cars—"for immediate shipment the blankets are packed in corrugated boxes, reinforced with four steel bands . . ."

was done by hand scissors and a host of girls, it is now capably performed by two girls. One girl holds the blanket while the other operates the automatic knife. These girls change positions every hour so that there will be no danger of fatigue. The knife is run in a track so the possibility of its falling and injuring the operator is eliminated. Five thousand singles are cut by this machine in a day. The only upkeep this automatic knife demands is an occasional changing and sharpening of blades.

Production Increased

The blankets are next passed on to the plain hem machine or shell stitcher, according to the hem desired on the order. The plain hem machines were recommended by the manufacturer to run 1,500 stitches per minute but it was found that they would run efficiently at 3,500 stitches per minute, and they were speeded to the latter figure. Also, the shell stitchers were recommended to run 1,500 stitches per minute and they were speeded to 3,200. The question may arise as to whether this is advisable; they have been at these speeds now for nine years and so far they haven't given trouble. Care is taken, however, that they are properly oiled. Even should they wear completely, they have paid for themselves many times in the saving on labor. It is just as easy for an operator to work at 3,200 stitches per minute as it is for her to manipulate the machine at 1,500 stitches per minute. On the plain hem machine an operator can stitch 600 blankets in eight hours; on the shell stitcher one can take care of 400 blankets per day of eight hours.

The blankets are next folded by girls, who work in pairs. Each pair of folders are able to fold 1,400 single blankets a day. A folding machine could probably do the work of all the girls employed on this job but one for this particular type of work is not known at the present. At the folding table, the short filling that could not be burned off by the singer is trimmed by hand. However, if the singeing had not been previously performed, the work at this point would be considerably increased. One girl using hand scissors trims 500 single blankets a day.

When the time to label the blankets arrives, one operative using a hand staple machine fastens the labels or markers to the goods. Before the inauguration of the use of this stapling machine, five women were required to label the same amount of goods by sewing the labels on, whereas now this work is taken care of by one operator. Only two staples are necessary to clip the marker to the blanket and these in no way injure the product. This simple device has proven to be a profitable addition to this department.

Thus ends the inspection of the goods until they are ready to be shipped and then they are inspected once more.

Some interesting factors have developed in connection with the shipping of the goods, and now the mill has perfected its method of preparing the finished product for shipment so that no losses due to faulty packaging occur. In the case of blanket lining, or jumper lining as it is often called, the goods are brought from the grading machine and rolled for baling. There are over 100 yards to the roll and three of the rolls, which total about 400 yards, are baled together. First they are wrapped in heavy brown paper to protect the cloth from getting dirty when it is resting on the floor and from absorbing foreign matter in transit, then they are wrapped in burlap, which is sewed. After the bale is sewed, two steel bands are drawn around it for further protection in shipping.

At this time a tag is made for the bale that carries the information of the number of yards, pattern, and the initials of the baler. Thus if any complaint develops, the purchaser needs only to mail the tag back to the plant and the person responsible is asked to explain the cause of the trouble. When the baler puts his initials on the tag he is more careful to run his job correctly than if he doesn't. Putting his name on the tag makes the job a personal responsibility and he takes a pride in doing it right.

The regular blankets are not baled as is the blanket lining but are packed in boxes to be shipped. Both corrugated boxes and veneer boxes are used. If the goods are to be shipped immediately, they may

(Continued on page 55.)

VARIABLE SPEED DRIVE

on Spinning Frames and Twisters by Use of Three-Phase Shunt Commutator Motor

By an English Correspondent

HERE an English writer discusses the use of shunt commutator motors for attaining variable speed drive on spinning and twisting. His facts are based on experience in England and on the Continent, where considerable progress has been made in the use of these motors on these applications, and the information will be of interest in America in connection with this timely subject . . . . . .

TO ELECTRICAL ENGINEERS must be given the credit of having introduced improvements in the method of operation of ring-spinning machines and of having brought this most essential agent in yarn production to a higher degree of perfection. Contrary to the operation of the self-acting mule, spinning and winding are continuous and simultaneous operations on the ring-spinning machine. This constitutes an economic superiority, but has a certain disadvantage as regards the spinning process itself. The conditions requisite for spinning and winding are not entirely fulfilled. The very wide fluctuations in the tension of the thread, when spinning at constant speed, affect its quality and set a limit to the working speed, which prevents the full productive capacity of the machine from being even approached.

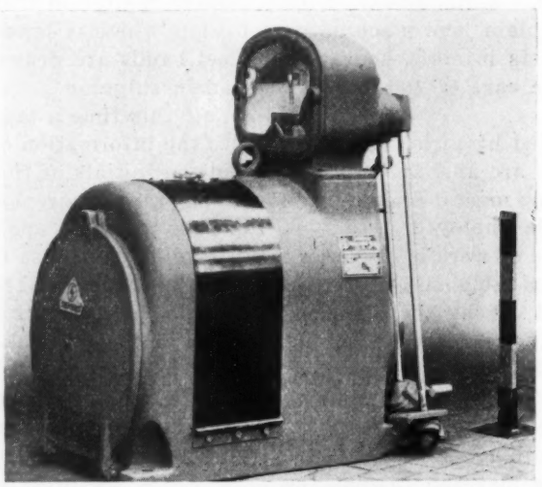
By equalizing the tension of the thread, through varying the spinning speed, the working process can be considerably improved. This was the principle which Brown Boveri followed in 1907/8 after very thorough investigations had been carried out on the characteristic of the thread tension during the spinning process and they made known the law according to which the speed must be changed in order to get a better yarn with constant thread tension while, at the same time, benefiting from the greatest production the machine is able to give.

At that time (1907/8), the application of this principle meant introducing quite novel methods of regulation. This led to the design of special spinning motors, namely, direct-coupled a.c. commutator motors, totally enclosed, built specially for this purpose and having smooth speed regulation over a wide range, by means of simple brush displacement and without losses; it also led to the design of the spinning regulator which transmits the movements of the ring plate to the motor brush rocker and regulates the speed of the motor according to the formation of the cop. Drives of this type allowed of a highly successful practical application of the theories put forward. The driving method in question shows a number of advantages, namely, easy adjustability of spinning speed to yarn number and to the quality of raw material used, setting of the most advantageous working speed, during a doffing, hereby, to reduce the number of thread breakages, the cop bottom (bunch) can be spun at reduced speed and more than two-thirds of the bobbin at a considerably higher speed than is possible with constant-speed transmission-shaft drive or constant-speed motor drive, it is reported.

This basic regulation, alone, either by hand or by means of the spinning regulator, increases the output, while the additional periodic regulation by the spinning regulator allows, apart from a still greater average working speed, an approximate compensation of the thread tensions on the drawing cylinder and bobbin during the building of the package.

An evenly distributed and increased strength is imparted to the thread, the bobbin is uniformly firm and carries more yarn for its size. Thanks to the compensated thread tension, quite fine, soft yarn can be manufactured on the ring-spinning machine instead of on the self-acting mule.

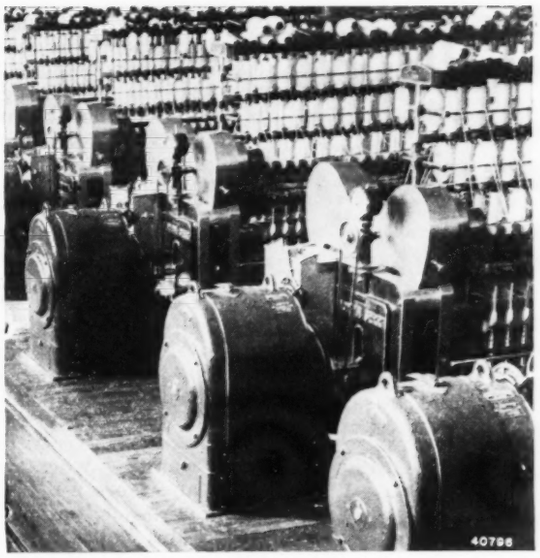
Despite the progress made, development work goes on. It was shown that it would be of still greater advantage if even the small speed fluctuations which are felt slightly by motors of series characteristic, when volt-



Courtesy, Siemens-Schuckert (Great Britain) Ltd.
The Siemens-Schuckert variable speed spinning motor with built-on automatic speed regulator.

age or load changes occur, could be eliminated and the most favorable speeds, which had been fixed by experience, could be held almost constant. Such extreme conditions of stability can be met, it is found, by a drive equipped with motors having a shunt characteristic.

Several European mills have lately introduced a three-phase shunt commutator, newly designed, which with the Schrage method of connection, is said to fill the severest conditions. It is said that with this motor, fluctuations in load, or variations in the supply voltage, exercise no influence. Therefore, when the bobbin is creasing and in the morning when the machine is cold there is no drop in speed. The motor maintains the speed to which it is set, exactly and continuously. The automatic setting by the spinning regulator is not affected by any influence and rigidly exact control of working conditions is imposed, even with mills working in shifts. The advantages of drive at variable speed are fully utilized and the shunt motor is gradually superseding the series motor, of which it retains all the advantages, but to which it is superior in regulating qualities, so that it can be expected to remain master of the field.



Courtesy, Brown, Boveri & Company, Ltd.

Part of an installation of Brown, Boveri commutator motors and speed regulators on spinning.

A very valuable quality of this shunt spinning motor is its restricted length, a result attained by using a special design of rotor, protected by Brown Boveri patents. These motors can, therefore, be installed in very restricted quarters; they barely take up more room than lineshaft drive. In other respects, they are well adapted to spinning mill conditions.

The switch for connecting the motor to the supply is also built into the motor and interlocked with the brush-shifting gear. No starter, etc., is required; starting, regulating and stopping is done by means of the brush-shifting handle. Service is, therefore, extremely simple and connection to the supply system is by three terminals as with ordinary induction motors. The efficiency at synchronous speed is as high as with belt drive by ordinary induction motors at constant speed while the power factor improves up to 1 for speeds above synchronism. These motors are, therefore, economical to operate and are suitable for improving the total power factor of spinning mills.

The motors are built in various sizes, for outputs of 3 to 16 Kw. and for regulating ranges of 1:2 and 1:3 or more; they are designed so as to be suitable for every kind of spinning and doubling frames. Cotton-spinning frame drives are characterized by direct-coupling of one single motor; worsted-yarn spinning frames are equipped with double drives, composed of two motors, each of which drives one side of the machine independently of the other. Owing to the low operating speed, motors to drive worsted-yarn spinning frames are designed with high-grade, oil-immersed reduction gears, built into the bearing shield. The design with a reduction gear is also suitable for the drive of bast-fiber flyer spinning and doubling (twister) frames. A spinning regulator is usually not used here, but drives which can be regulated, as in the case of ring-doubling (ring twister) frames, are of great importance; the reason is that adaptation to the most favorable speed for the different yarn numbers and doubling effects and readjustment by hand during spinning or doubling has been proved, in practice, to have many spinning and economic advantages.

The advantages of the variable speed drive of ring spinning frames and doubling frames by three-phase shunt commutator motors can be summarized as follows: the r.p.m. and the spinning speed remain stable even under fluctuations in the load or in the supply voltage. For average and fine yarn numbers the spinning speed can be automatically governed by the formation of the cop, in such a way that the thread tension is compensated for and the winding of the bobbin is improved. Although the spinning speed is greater, there are fewer thread breakages. The machine produces more and better yarn. Quite fine yarn up to the very finest yarn, of even a soft quality, can be spun on the cheaper and simple ring-spinning frame instead of on expensive self-acting mules which take up so much room.

200 Looms Per Weaver in Russia?

In current periodicals there has been some information given on the textile operating conditions and efficiency in the mills of states of Soviet Russia. In the new movement toward greater machine output, called Stakhanovism after one of the mill operatives who first achieved recognition in this field, it was claimed that weavers were running 200 looms.

Now comes the report from Ernest Thornton, assistant secretary of the Rochdale Weavers' Association, of England, who says that Russia actually has made great strides in improved working conditions and manufacturing efficiency, but that **the weaver who runs 200 looms has nine assistants.** *In our own way of figuring, we say that this makes somewhere around 20 looms per weaver, which makes us feel better now that we don't seem so inefficient by comparison.*

We know of a mill where one loom fixer has 1,600 looms under him—but he is the head fixer and has seventeen **assistants.**

Mill Men Talk on Social Security at Blue Ridge

A STRAIGHT-FORWARD *expression of opinion concerning the Federal Social Security Act was made last month by Robert West, president of the Riverside & Dan River Cotton Mills, Inc., Danville, Va. Mr. West was speaking at the Southern Conference on Human Relations in Industry, at Blue Ridge, N. C., July 16, and followed on the program a representative of the Social Security Board, A. W. Williamson, who spoke in the place of Governor John G. Winant, chairman of the board.*

Mr. West predicated his comments upon the assumption "that the objectives of this legislation are socially desirable, that the proposed methods of financing are economically sound, and that its provisions are possible to administer. He said in part:

"One characteristic of this Federal law which can be readily understood is the fact that it requires subscription on the part of industry and on the part of the individual industrial worker, regardless of his ability to pay. The tax load upon industry is not contingent upon the possibility of the industry having the surplus from which to pay the assessment. The mere fact of having a payroll is the basis of the tax.

"The individual worker himself is to have a portion of his income appropriated whether or not such income provides him adequate support. There are no abatements, no extenuations, the charge is a primary one and there is no option in the matter. Whatever payroll an industry maintains, whatever income the individual worker may have, that forms the basis of the levy. The individual worker, however small his income, is called upon to relinquish control over a part of it. To be sure, the portion thus appropriated is to be for the moment small, but there is nothing in the principle involved which would keep it small, and there is nothing to prevent an all-powerful government increasing the portion for sundry other objectives which might occur to those who might at any given time be in position of power. To study this matter with candor demands examination of this principle as one which is of vital important to the utilization of individual income. I dare say, the passage of the Federal Social Security Act marks the most drastic departure from what we have considered normal relationships between citizens and Government that has been experienced in the history of this country. It marks a long step toward the people of the United States becoming subjects of a great power as distinguished from citizens of a great state.

"In the second place, the provisions of this legislation do not achieve social security. They provide an avenue of approach to it. The terms of the Act, by limitations to industrial activity, presuppose that there will be sufficient means available from industrial income, both corporate and individual, to finance the proposed benefits. It can be seen therefore that the hope of successful operation of even such a program as this resides in the continuity of substantial industrial activity.

"The Social Security Act by no means shifts the responsibility of security from industry to government; it merely sequesters funds obtained from industry and industrial workers and provides the specifications for disbursing such funds, so that when all is said and done, the primary reliance of the security of industrial workers still lies upon industry itself. Industry must of necessity bear the burden, whether by taxation or by gratuity, or by continuous operation. * * * Security for industrial workers can come in the last analysis only from the proper and continuous functioning of the industrial mechanism. * * *

"There is a naive disposition in some quarters to believe and act upon the theory that industry exists of itself, that it is a self-perpetuating phenomenon, that it is a well having an endless supply of water, and that whatever is needed or desired may be plucked from it, much the same as the bread fruit tree in the tropical climates provides sustenance for the mere plucking of its fruit. Such appraisals, however, lose their validity when subjected to actual pragmatic tests, and there remains the necessity of industry carrying on its obligations and responsibilities within the limitations imposed by economic facts. * * * Security for the industrial population can be achieved only by an adequate operation of industry. Government may specify certain benefits and prescribe the procedure of financing such benefits, as is done in legislation of this kind, but it must look to industry to supply the necessary funds, as it also does in this case."

The conference at which Mr. West spoke is an annual occasion, sponsored by a promotion committee of 15 southern industrialists, including the following textile executives:

C. A. Cannon, president, Cannon Mills, Kannapolis, N. C.; Donald Comer, president, Avondale Mills, Birmingham, Ala.; T. M. Forbes, secretary, Cotton Manufacturers Association of Georgia, Atlanta, Ga.; and Luther Hodges, production manager, Carolina Cotton & Woolen Mills, Spray, N. C.

The purpose of the conference is the discussion of practical industrial relations problems with which southern industrial employers are confronted. In past years, the attendance of textile men has been meager, but has been steadily increasing, and last month out of an attendance of possibly 300, there were more than 50 textile mill representatives who attended this conference, and a conference of southern industrial executives which immediately followed it.

Donald Comer, president of the American Cotton Manufacturers Association, was another textile executive who spoke at the conference. He discussed the matter of employee home-owning, and its importance, declaring that in one of the communities of Avondale mills, the company had made it possible for more than 100 mill families to go out into the country, close to the mill but far enough away to make a small farm possible. These families acquired about five acres each, and built houses of their own choice, with the financing being done by the mill at a low cost. Mr. Comer stated that not one of these families has failed to make the regular payments on these homes every two weeks.

Claudius T. Murchison, president of The Cotton-Textile Institute, Inc., was also on the program, which was devoted mainly to the subject of security for the southern industrial worker. Dr. Murchison declared that Federal Government experiments in old age and unemployment insurance legislation have not relieved industry of its obligation to continue efforts to solve the problems of social security through its own and other private agencies. Government cannot pre-empt the field, he said, declaring that employers with a social consciousness will continue to promote and encourage such programs as group insurance to provide for various contingencies, group annuities, mutual benefit associations, credit unions, and home ownership.

Making a Machinery Survey

A descriptive discussion of how and why a thorough, periodic inspection of mill equipment should be made

By Richard S. Pope

THIS begins a discussion which, in addition to telling how and why a machine survey should be made in the mill, gives a great many practical suggestions as to what to do with the information that the survey reveals. The discussion is based on an extended and thorough experience in making and following up machinery surveys in a large number of plants in the South and East . . . . . .

IN RECENT issues of COTTON, considerable space has been devoted to modernization and maintenance. In one of these issues, The Scavenger Roll makes some pregnant remarks when he gives his ideas as to why more mills do not modernize or have a maintenance program in effect. His views are ably expressed in one statement: "Sadly we must admit the treasurer's defensive attitude is often justified because the superintendent has not weighed carefully the proposal he is recommending, has not established as a certainty how he can and to what extent the repairs or the new equipment, as the case may be, will benefit the mill." Then again, "The superintendent should periodically analyze his mill from the standpoint of maintenance and obsolescence with his own resources and/or the assistance of competent engineers. The results of this analysis should be put down in figures that can be supported by actual operating performances and conditions, etc., etc."

The article quoted does not imply as much, but it might be possible in rare instances that the treasurer does not know the machinery in an intimate way and any proposal involving the spending of money would have to be presented to him in an explanatory and methodical manner to get his consent, but in many cases the controller of the purse is one that has reached the position because of his ability to handle machinery first, and then has shown an aptitude for handling money. In any case, it is hard to conceive that anyone connected with a mill in an executive capacity could not know the advantages of modern machinery over the old equipment.

"The superintendent should periodically analyze his mill." It is a simple matter for the superintendent to tell the treasurer that he needs this and that before he can get production and quality, but the logical thought of the treasurer is, how far have machine conditions entered into creating a low state of production and quality, and what can be done to overcome this handicap? These questions tend to reduce the advantageous prospects of the new equipment over the equipment that is already installed. Both of the men, being logically minded, realize that there is a close relation between the condition of the machinery and the manner it is operated—thus they immediately want an analysis made of the machines and operating conditions—a survey.

According to Webster, to survey means "to view attentively; to measure". These definitions, when applied to a mill, are not simple to perform when it is realized that there are a great number of things to visualize on hundreds of machines; furthermore, the term "survey" can and does cover any detailed study of any and all phases of manufacturing. There should be no thought that a survey that is limited to machines and operating conditions is going to show any wholesale weaknesses, on the contrary, it is likely to show that there are a multitude of small faults, which if corrected, will tend toward uniformity and toward giving better working conditions both at the place of correction and in the following processes.

Who Makes the Survey?

The person responsible for the survey should be one that knows what the perfect working condition of a machine is and he should be able to give an accurate, honest and unbiased estimate of the condition as found. The next step should be to secure a form that will make it easy upon which to record the information. The headings of this form should show the number of the machine, type, name of the manufacturer, year made, model and should have the name of the fundamental points and working parts which in turn may be interpreted into an operating condition.

The interpreting of an intangible condition into actual figures is the job of the person making the survey and this is where he is called upon to use his best judgment. For his own personal convenience and so the report may be easily interpreted by others he could rate the points and working parts of the machines as follows: *Good* could be rated from 100 per cent to 90 per cent; *Fair* could be rated from 89 per cent to 80 per cent; *Bad* could be rated from 79 per cent to 70 per cent; and any condition worse than this could be rated as *Poor* or 50 per cent.

Opener Room

Starting in the opening room, for example, we know that the hopper feeders are used to make and maintain a uniform mix or blend. Of course, a difference in the amount of feed from each hopper will not cut a big figure in the operation of the mill but it is an undeniable fact that uniform mixing is a big factor in maintaining uniform numbers and it appears

SAMPLE ILLUSTRATIONS OF FORMS USED FOR MAKING MACHINERY SURVEY

MACHINE	MAKE	AGE	MODEL	% PINS OUT	FEED APRON SHAFT BEARINGS		BOTTOM APRON		CANVAS ON FEED APRON
					TOP	BOTTOM	FRONT	BACK	
1	X	20		5	G-90	G-95	G-95	G-95	Fair - 85
2	X	20		7	F-84	F-85	F-85	F-85	Fair - 75
3	Y	8		4	B-75	G-90	F-80	G-90	Good - 95
8	Y	10		6	F-85	R-70	G-80	R-80	Good - 90
9	X	20		7	G-95	R-50	B-75	B-75	Good - 95
AVERAGE CONDITION				5.6	87	80	84	86	87½
REPLACEMENTS						2			
COST OF REPLACEMENTS									
REPAIRS									
LABOR COST									

Fig. 1. This form is used in making a survey of the opening equipment. Space limitations preclude the use of the complete form; but the illustration will show its arrangement, and the complete details may be found in the article . . . . . .

to be out of line to have equipment for purposes of uniformity and not have the separate machines themselves running uniformly. To make a uniform mix or blend, the feed aprons in hoppers of equal width should run the same number of feet per minute provided there are the same number of lags per foot and the pins in the lags are all of equal length. A form to check these and other points could be made to include:

Machine number, make, age, model, and r.p.m. of apron shaft, diameter of apron pulleys, feet per minute of apron, number of lags per foot, number of pins per lag, length of pins, percentage of pins broken or missing, setting of stripping roll to apron, feet per minute of bottom apron, apron shaft bearings top and bottom, apron shafts top and bottom, bottom apron bearings front and back, studs, stud gears, leather on aprons, canvas on aprons, slats broken in bottom apron, driving belts, etc., etc., and remarks.

It is not necessary to explain how to fill in these headings, but since the rating of a condition might not be clear, the accompanying illustration (Fig. 1) is given showing, in part, a form covering the Opening filled in. Obviously, it is impracticable to reproduce a complete form with all of the items listed shown on it, but this sample will give an idea of the construction of the sheet.

Benefit of Averages

From the averages (in the illustration) it may be seen that the points under consideration are in *"Fair"* condition with some points almost *"Good"* and others almost *"Bad"*. It is hardly possible that any condition in any mill will ever be found perfect, no matter how hard the perfect state is sought. Therefore, the interested party should decide just what comprises an average condition and what is satisfactory for everyday running before the survey is made. If over a period of time the results are not as expected, then the standard of operation should be raised, but it would be better to go into every item and see what can be done to improve matters. In this example, it might first be decided that 80 per cent on the bottom bearings is good enough, but further investigation might show that uneven setting of the tension is causing the wear and an excessive use of power. The 5.6 per cent of the pins missing might not be enough to warrant removing the apron to have the pins replaced yet it might be decided that any apron with 7 per cent of the pins missing should be replaced.

Opening room equipment varies in type and quantity so that it is difficult to set up a definite form to follow, however, a form could be made along the same general lines as that used for feeders.

Pickers

No doubt most of the mills today have some arrangement of one-process picking and as there are many different hook-ups of these arrangements it would be difficult to give a form here that would cover all of them. As a suggestion the following headings may be included (see Fig. 2):

Machine number, make, age, diameter of apron pulleys in hopper, number of lags per foot, number of pins per lag, length of pins, percentage of pins broken or missing, setting of stripping roll to apron, feet per minute of lifting apron (the cone belt in the center of the cone), feet per minute of bottom or ratio of bottom to lifting apron in feet per minute (cone belt in center of cone), number of slats broken in bottom apron, condition of apron shafts and bearings, condition of feed apron, feed roll bearings, feed roll journals, feed roll nicked or grooved, sharpness of feeder, grid bars missing, setting of grid bars to beater, setting of beater to feed rolls, dents in screen, holes in screen, leathers around screen, grate bars missing, back-lash in calender roll gearing, wear on side shafts and bearings, wear on evener cone shafts and bearings, cone belt, approximate position of cone belt, type of back beater, middle beater and front beater, diameter of back feed roll, middle feed roll, front feed roll, r.p.m. of back feed roll, middle feed roll, front feed roll, inches delivered per minute by back feed roll, front feed roll and middle feed roll, r.p.m. of back beater, middle beater, front beater, blows per inch by back beater, middle beater, front beater, r.p.m. of fan back section, middle section, front section, position of dampers at top and bottom on back, middle and front of lap, actual length of laps, maximum weight of lap, minimum weight of lap stick, 100 per cent production per week, actual production, per cent production needed to balance cards, etc., etc., remarks.

In addition to these headings it would be informative to find the amount of droppings from each beater which would show the difference in air drafts, settings of the bars, etc., between the several sections. A check of the number of off-weight laps made by each picker would show immediately any temporary maladjustment which could be fixed then, such as an insufficient quantity of cotton feeding from the openers so that the last picker is not supplied properly by the distributor. An ingenious method of control between the openers and the pickers is the use of old slasher cones hooked as a variable drive to compensate for differences in weather, mixes and types of

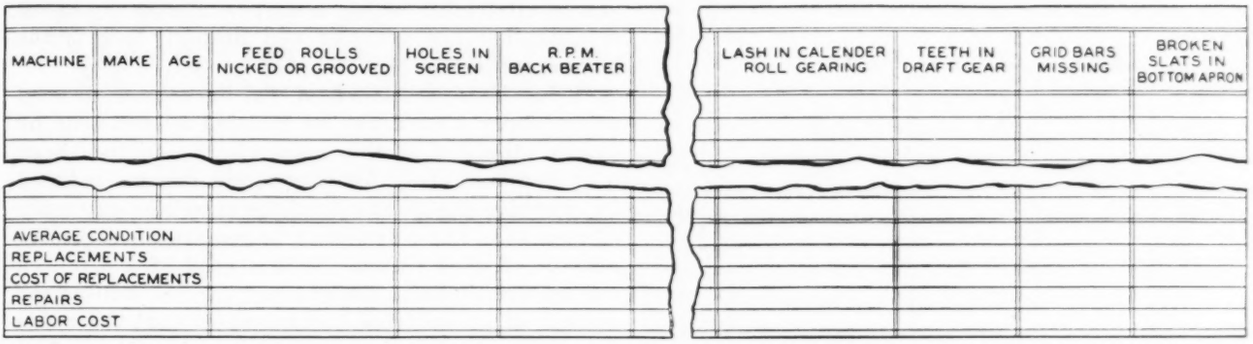


Fig 2. This form is used for the picker survey. As with Fig. 1, the illustration does not list but a few of the items to be covered, the remainder of which may be found in the article . . . . . .

cotton. The maintenance of the feed between the openers and the pickers is important, especially on single-process pickers.

Creeling Pickers

Where one-process pickers are not in use and the intermediate and finisher is lapped with the usual four laps it is a good idea to check the methods of creeling these laps on the feed apron because considerable variation may be made if the size of these laps does not vary. According to one theory, the reason for a resultant variation is that the evener motion operates on thickness and not on the density of the sheet of cotton passing over or under the pedals. The weight per yard at the large end of the lap and the weight at the pin may be the same, but the part nearer the pin is not as thick, consequently in trying to correct for a difference in thickness the evener has a tendency to distort the weight per yard. This theory may be visualized practically by creeling four full laps on the apron of a finisher and allowing them to run as many laps as they will make on the front and by not moving the evener control during this time. The result will be that the first lap will be of a certain weight and the succeeding laps will be heavier than the preceding one. Therefore, to compensate for this difference of fluffiness or density of the sheets being fed, it is necessary to creel the laps on the apron of different sizes. This is where the single-process pickers are advantageous because the operative does not have to be troubled with creeling different sized laps.

If this theory as explained is true, then we may readily understand the necessity of maintaining a uniform feed to single-process pickers because the variation in feed will cause a difference in the density of the cotton in the hoppers and a variation of density in the hoppers will make a difference in the amount that is taken up by each pin on the lifting apron. It is true that any difference in the feed is supposed to be regulated by the evening attachment between the pickers, but often the eveners commence working a little after the damage is done.

Speed of Beaters

The picking and opening machinery, in comparison with other mill machinery, is heavy duty equipment and the general tendency is to overload and overspeed the machines at these processes. It is elementary to state that slow feeds and slow beater speeds will give better results and a survey that discloses a difference of 25 per cent in the requirements of the cards under a non-stop production of the pickers would do well to recommend a reduction of at least 10 per cent in the speed of the pickers. Not only will the force of the blows from the beater be reduced but also will there there be a saving in power. A 10 per cent reduction in speed has been shown to reduce the power consumption at this point approximately 15 per cent, and by figuring the cost per horse-power per year and the power requirements per picker, it will be seen that there is a considerable saving by a closer balance in production requirements. As a basis it is suggested that the beater be held to 1,000 r.p.m. for two-blade beaters and that the speed be regulated to get 100 blows per inch for three beaters on Middling cotton. As the foreign matter increases in the cotton, the blows per inch should be increased 10 per cent for each half grade. This increase in blows per inch should be achieved by decreasing the size of the feed pulley without increasing the beater speed to compensate for the loss in production, if possible.

Some of these comments probably do not come exactly under the head of a mechanical survey but it is operating conditions closely related to operating conditions caused by the faults of mechanics. It should not be difficult to check the pickers in the same manner as the feeders; all that is necessary to keep foremost in mind is that every part and point on machinery is supposed to operate in a definite manner.

Cards

There is a form for the cards with over 50 headings covering practically all the points and parts of the card and its operation. We know the object of carding is to remove foreign particles from the staple, disentangle the individual fibers, remove a certain amount of the shorter fibers and change the form from a sheet of picker lap to a sliver form. There is no doubt but that as nearly a perfect performance as possible may be obtained on a new card that is properly set and run at a speed consistent with the type of cotton being carded. The reason for this near-perfection in a new card is that all the points and surfaces are in perfect alignment in their respective way and all the points on the licker-in, cylinder, and doffer clothing are the proper length to give a full carding effect, also the screens have no indentations and are polished. The further from this condition that the

cards reach, the less satisfactory the results will be. Some of the headings of a form to check the cards could be as follows:

Number, make, age of machine, r.p.m. of cylinder, r.p.m. of licker-in, r.p.m. of doffer, weight of sliver, weight of lap fed, draft, draft constant, settings of feed plate to licker-in, top knife to licker-in, bottom knife to licker-in, angle of top knife, licker-in screen to licker-in, cylinder screen to cylinder (back, middle and front), licker-in to cylinder, cylinder to doffer, flats to cylinder (points 1, 2, 3, 4, 5), front plate to cylinder, gauge of sliver trumpet; condition of licker-in, dull—hooked—high and low places; cylinder breaking out, raised—jammed—dull—hooked—faced—loose wire—loose clothing; flats, breaking out—faced—dull—loose milled ends; doffer (same); feed roll, nicked—dirty—bearings worn—journals worn; comb box, throwing oil—comb loose—comb noisy; flat chains, links worn—links stiff—number of flats in chain, number of chain pulleys not turning; cylinder bearings leaking oil, condition of flat grinding former; condition of traverse grinder; condition of drum grinder; etc., etc., remarks.

The cylinder is usually found to be running at standard speed but there is a possibility that the licker-in is below normal speed because of belt slippage. This should be checked. The diameter of the doffer, the weights fed and delivered, and the draft features can be omitted if all of the cards are of the same make, but these points should be noted for general information. All the drafts should be figured because the human element of error enters and the wrong gear may have been used on some of them.

For the settings, it is not necessary to check every card while making a survey, but a definite percentage of the cards, say 20 per cent, should be checked for every setting so that a conclusive sample is made that is representative of conditions.

Important Comments

The setting of the feed plate to the licker-in and the condition of the licker-in wire are very important items in carding because a large percentage of the carding is done here. Just how much is accomplished can best be seen by getting under the back of a card while it is running and watching the difference between one card with a good licker-in set close to the feed plate and another card with a dull, hooked or irregular licker-in set close to the feed plate. The angle of the mote knives has some effect on the amount of waste removed and they should be checked with an angle gauge that is made for this purpose and supplied by the machinery manufacturers for a small sum. The setting of the mote knives to the licker-in has more effect on the amount of waste removed than does the angle; on the other hand, tests have been run on cards with one knife out and another test made with both knives out where no appreciable difference could be seen between the two. The biggest part of the waste made under the card is at the licker-in screen; this may be checked by putting a partition of tin that will divide the droppings between the knives and the licker-in screen. It is a well-known saying that no two cards will throw the same amount of waste under the screens; it has been repeated so often it is generally accepted as a fact and it is relatively true between a sharp licker-in and a dull licker-in or a licker-in with high and low places in it. But under any condition of the licker-in, the amount of waste can be controlled within a narrow margin by using screens that are polished and properly set, minus humps and dents.

It has been demonstrated that the amount of good waste under a card can be reduced 50 per cent by proper attention at this point; it has further been been demonstrated that the waste can be reduced by changing the character of the screen on one make of card that has a tendency to remove an excessive amount of good cotton. It is a good idea to check the amount of waste under every card as well as the amount of strips from every card so that the cards removing an excessive amount may be attended at once. Naturally, it is first necessary to know what the maximum allowance should be for the particular type of cotton being run. A pound saved per day per card on 100 cards is the equivalent of a bale of cotton per week.

The setting of the licker-in to the cylinder is important because the cylinder with a greater surface speed unloads the licker-in and in so doing produces a carding effect at this point; an uneven setting, a wide setting, or irregular surfaces between these parts will not give as good results as when the settings are correct. The difference in surface speed of the cylinder and doffer, with the doffer wire angle the same as that of the cylinder but running in the opposite direction and with more points per square inch, causes the doffer to unload the cylinder. It is likely that more carding is accomplished at this point than is generally conceded, consequently, imperfect settings and surfaces will not be beneficial.

(The second installment of this serial discussion on making machinery surveys, and making them valuable, will appear in an early issue.—The Edtor.)

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Uses Bulletin Boards with Good Results

From a mill superintendent who believes that his operatives will always attempt to use their heads for the betterment of themselves and the company if they are only reminded continually of it, we get his idea on bulletin boards. However, his conception of this item is that one picture is worth many pages of reading matter, thus he has a bulletin board that will carry a perspective picture or tableau. In fact, it is in the shape of a stage and is placed at the entrance to the mill where all that enter may see it. The stage is 32 inches high 60 inches wide and 24 inches deep. His latest still is a ship in a stormy sea with the look-out on the bow and a lighthouse is in the distance. It is a picture that will attract everyone's attention and under it is the caption-moral: "Backed by good judgment, the navigator's skill brings his ship safely thru. Applied to every-day problems, nothing helps us so much as good common sense."

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The time has come when every problem connected with making, buying and selling, and consumption of cloth should interest us. A successful banker or broker does not just sit and wonder what is taking place; he is posted well on current events and makes his plans accordingly. Textile executives must do likewise.

WARP SIZING, by Paul Seydel (Article 9)

The author gives in this, his ninth discussion, some practical thoughts, in connection with warp defects, how to prevent them, etc. . . . .

IN THIS, the ninth installment of his series, Mr. Seydel gives a number of practical suggestions covering common defects of the warp, their detection, etc. He also relates a number of experiences in connection with complaints received by mills, and emphasizes the point that the size mixture is not always to blame for the sins with which it is charged . . . . . .

Defects of the Warp, Detection, and Useful Hints

SOME OF the defects of a warp are evident before the cloth is made. Sometimes they become evident only when some processing or some use shows an inferiority. A finisher once sent a sample of buffer cloth to a gray goods mill complaining that it was so gritty that it caused considerable damage. Having been called as consulting chemists, we examined the sizing compound, the starch, the cloth and the water. Under magnification of 100 diameters, the warp of this cloth plainly showed small particles like fine sand with sharp edges. A number of samples of cloth and warps were examined and only the sample of cloth complained of showed this defect and it was unmistakably on the warp.

The only conclusion that could be derived from the careful examination of materials, conditions and circumstances was that intermittently the water supply used for sizing had fine particles of sand in suspension. The water reservoir had gradually become filled with fine sand up to the opening of a pipe that furnished the water used for making up size. The remedies suggested were removing the accumulated sand in the reservoir, better settling provisions for the water, an adequate filtering installation, or the use of condensed steam for making up the size.

The water supply for successful sizing should be good, clear, soft, free from gritty sediment, suspended matter, or anything likely to affect the warp unfavorably.

Mineral oil stains. The warp sometimes has mineral oil stains, either just oil or oil and dirt, often containing iron and fine metallic particles from bearings.

When the finisher finds mineral oil interfering with his processes he is inclined to think that the sizing is to blame. We have never found this to be the case. In every instance that has come to our notice, where mineral oil stains gave trouble to a finisher, it was due to lubricating oil splashing on the warp or cloth through careless operation. In the sizing we have examined, there was always a good deal of animal fat and quite often a considerable amount of vegetable fats, and if a reasonable amount of mineral oil was used, it would be so emulsified or dissolved in the tallow and other fats and so evenly spread over the whole fabric that any agent that would remove the tallow and other saponifiable fats would also remove any reasonable amount of mineral oil.

If lubricating oil splashes from a bearing onto the warp or the cloth, it is not the oil that causes the real trouble but small metallic particles caused by friction in bearings and carried by the lubricating oil. It is practically impossible to remove these small metallic particles, which form dark spots that are very objectionable.

When oil spots are found on cloth and the cloth is to be dyed, it is best to leave them to be removed in the de-sizing operation because the application of a spot remover results too often in permanent damage causing the dye to show up dark. For a long time these dark places in the dyed cloth were erroneously blamed on mineral oil; now, however, it is known that when cloth has been rubbed it will cause the dye to show dark as the cloth will absorb more dye in the abraded spots.

Mildew. There are many varieties of mildews, every shade of the rainbow, besides black and brown, being exhibited by the different varieties: yellow, green, pink, purple, grey, red, brown, black. The red is often mistaken for rust spots. All are due to excessive moisture or exposure of the fiber to dampness for a sufficiently long period.

Mildewed cloth generally has a characteristic odor, although when the cloth is dried and exposed to the air this odor may disappear. Chlorine bleach, sodium or hydrogen peroxide will generally bleach out mildew stains. In this way mildew stains can be differentiated from iron stains. In most cases the mildew is only on the size and unless it has attacked the fiber it is readily removed.

A good way to determine whether the stain is due to iron or mildew is to incinerate the cloth. Mildew will leave a white or greyish ash, whereas, iron will be rusty red. Besides, the well known tests for iron may be used.

Rust spots. Rust may be due to a number of causes, the most common being rusty pipes or careless handling of the size kettle. If a steel kettle is to remain idle for any length of time, it is good practice to fill it with water containing a pound or two of some form of sodium carbonate such as soda ash or sal

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The first article in this series, page 43, November, 1935, COTTON, gave a non-technical analysis of the composition of raw cotton; the second, page 44, December, 1935, issue, covered flours and starches; the third, page 55, January, 1936, issue, discussed gums and glues; the fourth, page 63, March, 1936, issue, covered fats, lubricants and softeners; the fifth, page 74, April, 1936, issue, covered deliquescents and preservatives; the sixth, covering weighting materials, appeared on page 68, May, 1936; the seventh, page 60, June, 1936, covered water; and the eighth, page 59, July, 1936, covered the ingredients necessary to make a well-sized warp. Reprints of these previous articles are available to those who do not have copies, upon request.—THE EDITOR.

soda. This is drained or washed out before kettle is used again. The water pipes should be at least galvanized, and preferably of brass or copper. The metal parts of the loom are likely to rust, especially the reeds and heddles in a room where humidifiers produce a very damp atmosphere. A size mixture with the proper proportion of fats will have a tendency to protect such metal parts where the sized warps come in contact with the metal. Stainless metals are now made and it is but a question of time when all rusting metals will be replaced by these very useful stainless alloys.

Oil from bearings of the loom or rusty shafting often cause iron stains which remain even after the oil is removed.

An iron stain will not be removed by boiling the cloth with soap or soda. Such a stain will resist the chlorine bleach, which will discolor mildew stains. A test for iron can be made with sulpho-cyanide of potassium or ferrocyanide of potassium.

Iron stains may be removed by binoxalate of potassium, oxalic acid, or dilute hydrochloric acid followed with copper sulphate. This must be done with great care and the chemicals well washed out, for if they remain in the cloth they are likely to damage the fiber.

The finisher often blames the size manufacturer or the size mixer for the numerous troubles he encounters. It is true that some unscientific size mixtures made without thought of the requirements of further processing might cause trouble, but in most cases that have been brought to our notice the cloth manufacturer was not to blame for the trouble.

More than once we have been called to advise when a finisher who complained about what he called "resist stains" thoughtlessly blamed the size mixture used for the warp when the goods were made of two-ply yarn warps totally unsized. Upon analysis of the cloth we determined that although no size had been used by the manufacturer, the cloth contained a considerable amount of starch and finishing material. Further investigation showed that the finisher had used a finishing mixture containing a considerable amount of starch, this finish had been allowed to cool, a crust and consequently a considerable amount of insoluble starch had formed. No amount of stirring or boiling could get this back in solution and, of course, the finish was uneven. The calender friction made a "shiner" wherever there was a lump of size, no matter how small, and the result was a very ugly piece of cloth, especially when the cloth was dyed a light shade. The finisher, confronted with the facts, had to admit that the manufacturer was entirely blameless.

Many defects and controversies with the finishers can be avoided by using a size that is scientifically compounded with a view to helping produce ideal weaving conditions and yet not forgetting that the cloth must be bleached, dyed or processed in one way or another after it is woven, also, that it must be shipped, stored and often kept on shelves and in store rooms for long periods.

The manufacturers of a size can, when requested, generally prove to the finisher that the cloth manufacturer is blameless when controversies come up with the finisher.

Useful hints. A large mill weaves small bags made of 7s or 8s yarn loosely woven; these are tied on the outlet of pipes discharging from the size kettle into the size box. These bags catch lumps of starch, sticks, straws, pieces of string and bagging and at a very small cost save the warp from material which might cause seconds to be produced. The bags are put on fresh every morning and are used all day. At night there is invariably in each bag a small amount of undesirable matter which in this way is kept from deteriorating the warp and of course, the cloth. This is a very good practice not only for sizing but especially for finishing.

Other mills have a small box-shaped sieve, the bottom of which is a fine mesh copper screen, to strain the size as it enters the size box. Either method is good and serves an excellent purpose.

It is very important to wash the size boxes every night right after ending operations and to leave no old size, films, etc., in them overnight, but to have them thoroughly clean and ready for running the next morning.

The same care should be taken of the size kettle and circulating system. A suitable arrangement should be made so that the kettle can be cleaned and flushed without discharging into the size boxes.

Much trouble is caused by careless handling of warps, keeping warps in places that are dusty and unclean. The warp dresser should insist on having a clean room, free from dust and dirt, and his assistants should be warned to handle the warps with care, as in a moist state they readily absorb dirt and dust.

It is advisable to have the size maker use a container or containers for weighing his starch, large enough to hold the whole amount at one weighing. The use of two or three roving cans that can be placed on the scales together and all weighed at once is very good. This gives one weighing and at the same time affords an easily handled amount. Weighing in pails or small amounts leads to mistakes which single weighing readily avoids.

Some mills in order to check on the size maker use glass slides. Just after the size has finished cooking, the slide is dipped in the size and placed in a protected place, free from dust or air currents, to dry. A very slight difference in amount of starch or compound or even in cooking makes a marked difference in the appearance of the films produced. If these films do not run uniform, the size maker is not on the job. A little experience will soon teach the overseer or superintendent how to judge a good film from a poor one.

Some recording or regulating instruments when properly cared for and kept in good repair are very useful to help obtain even results.

A system of marking the warp should be used so that the responsibility for any defective warp can be traced back to the slasherman or size maker that made it. The tension on the warp from creel to loom beam should be checked frequently. Slasher cylinders not gear-driven should be checked to make sure they turn freely. These factors, when not in condition, produce in the warp lasting faults that cannot be remedied.

(The tenth installment in this series will appear in an early number.—The Editor.)

Three Weeks---and Not a Superintendent Yet

THE OTHER DAY a young man, well dressed, florid faced, red-haired and of blustery type, galloped into our office and without waiting for admittance or introduction leaned over my desk and demanded INFORMATION.

Unconsciously I gave my chair a push and let its rollers carry me back a few feet from the furious young man. Adopting a soothing voice I suggested that he have a chair and tell us what sort of information he needed, adding that we would be glad to help him out if possible.

"I want to know if there is anything in the code that prohibits a person getting paid for his work in a textile plant? I want to know how long a person has to work as apprentice before he gets on the payroll? Does a man have to remain an apprentice for six weeks if he can learn in less time than that?"

A sensation writer trying to scare up headlines, I thought. I balanced my words carefully. "You must know that there is no such thing as Code anymore, since NRA collapsed. You realize that the mills are voluntarily adhering to the minimum wage and maximum hour rulings? However, I will be glad to let you read the paragraph in the late code regarding textile apprenticeship . . ." He read Section 2 aloud, "the minimum wage that shall be paid by employers in the Cotton Textile Industry to any of their employees, except learners during a six weeks apprenticeship . . ."

"Do any mills pay learners anything?" he insisted.

"That all depends on the mill, some do and some don't. However, most of them in this locality do pay learners and they average from six to ten dollars a week, depending upon their quickness and ability to handle the work."

"Well, I just can't understand that", he emphatically stated in an injured voice, "I've been working in a mill for three weeks and I haven't received a penny. This morning I decided I would just find out why I wasn't."

I put on my most frigid executive manner. "Young man," I said, "I'll do what I can to help you straighten out your tangle but I'll have to know your complete story to get at the bottom of this business. You don't have the appearance of a person to whom five or ten dollars a week, more or less, would help or hinder. Now what is your status and what are you after; why all this barrage of questions?"

ALTHOUGH the reader will have to see deeper than just the text, this case may well be applicable to some of our young men that train themselves for the industries at large. Many young men fail for lack of patience in promotions. Moses was well past the three score and ten mark when he was chosen to lead the Israelites on their great journey; Cincinnatus was no youth when called from the plow; and certainly Socrates did not gain recognition in his early teens. And so, it is not with levity that we let you see this character in the story, but with the sincere hope that you will give it the consideration we believe it worth.—The Editor.

He became even more unhappy but broke down and gave me the works. "I am from Michigan and this is my first trip South. I got me a job in Greenville, S. C., with the highway department at $125 a month, but it was cold standing out there in the road holding a tripod and carrying a measuring tape, so I decided I would become a cotton mill superintendent. My uncle is a lawyer and he asked one of his friends to let me come into his mill and learn the business from the ground up. I started in three weeks ago. I told the manager I was going to be a superintendent as soon as I learned the business. I've been there three weeks, not at a regular job, but just learning. I wander around and watch the others and I believe I could do whatever they do, spool and doff and maybe handle a lap machine. But what I can't understand is this, I haven't been promoted yet."

"To what position did you expect to be promoted in three weeks?"

"Well, overseer at least, when they knew I expected to be superintendent!"

"UHmm . . . I believe I showed you the wrong file, Mr. Horatio Alger, Jr." I handed him the list of the 85 superintendents of local textile plants, and opposite each name on the list was the notation of the number of years each had been in the game. "Why don't you study this instead of the code rules. It would pay you to learn about other superintendents. The gentleman with the star opposite his name was awarded the Arkwright Distinguished Service Medal last year. He has been in a textile mill for forty-three years and he still considers himself a learner!"

And then, I left and went out to lunch. The young man left, too, and he took the list with him.

Reverse Twist on the Roving Frame

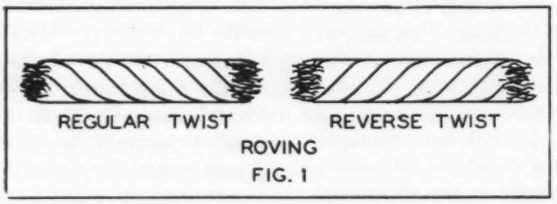
By Fay H. Martin

REVERSE TWIST, on the roving frame, is the direct opposite of regular twist. It may be possible that many readers of COTTON are not familiar with reverse twist on a roving frame. For those that are not, we will say that formerly, during the '80s and '90s and before, it was quite common in English fine yarn and thread mills to reverse the twist on every other process of roving; the theory was that the natural convolutions of the cotton fibers would be retained in their normal condition, i.e., the twist that was put in on one process would be removed in the following.

This practice never became common in the United States. However, the writer was in a large cotton thread mill in New Jersey sometime before 1910 and the reverse twist system was then in vogue at that plant. The organization was:

Slubbers	all right	twist.
1st Intermediates	all reverse	twist.
2nd Intermediates	all right	twist.
Jack Frames	all reverse	twist.
Spinning	all right	twist.

At the present, little reverse twist is being made on roving frames, for roving alone, but in a number of cases, roving frames are being used as twisters for special yarns. I have a yarn mill in mind where 3s and 5s perle were made on roving frames. The first process was right with a hard twist, i.e., the 3s were made with a hard twist and the 5s were made with a hard twist and then they were twisted together by a reverse soft twist.



ROVING
FIG. 1

About seven years ago while the writer was at the Woonsocket Machine & Press Company, we furnished the material to a southern mill to change some roving frames from right to reverse twist. It is not common but it is well that the rising generation should know how a roving frame may be changed to produce reverse twist.

Regular Twist

Now what is *regular twist?* In regular twist the lines run obliquely from left at the top to the right at the bottom; this is when the roving is held horizontally. See Fig. 1. When the roving is held vertically, the lines run from the right hand side sloping obliquely downwards to the left hand side. Expressed mechanically, it is a right-hand thread for regular twist and a left-hand thread for reverse twist. See Fig. 2. All bolts and screws on a roving frame have right-hand threads and in turning a nut onto a bolt, we turn the nut from the left to the right or in the same direction as the hands on a clock.

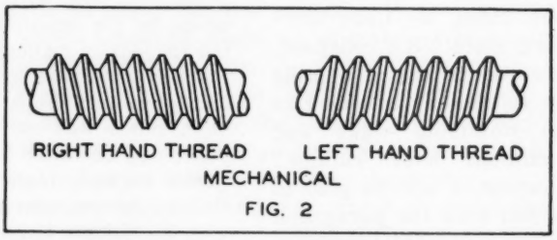
On a roving frame, the standard practice for roving is a regular or right-hand twist and all bolts and screws are right-hand also, so it seems that regular or right twist and right-hand bolts are almost universal in use.

Regular twist on a roving frame is made by having the flyer turn from left to right or around with the clock. On all time clocks and watches, the hands move from left to right and by having the flyer turn from left to right it produces regular or right twist.

The Change

To make reverse twist on a roving frame, one simply reverses the direction of the main shaft on the frame, thus making the driving pulleys turn in the opposite direction. Then by putting another intermediate gear in the twist gear train between the twist change gear and the gear on the top cone shaft, thus having two intermediates instead of one.

When this has been done, the main pulleys, flyers, spindles, and bobbins will all be turning backwards or in the opposite direction from what they were turning before the change was made, and the twist will be reverse or opposite to regular. Putting the intermediate gear in the twist train causes the drafting rolls, cones, lay gearing, and sleeve of differential to turn forward or in their usual direction which is necessary to have the cotton feed through the rollers and go forward to the bobbins. By reversing the direction of the internal gear in the differential and not reversing the direction of the sleeve, the frame becomes a flyer-lead frame instead of a bobbin-lead, as it was before the change was made.



MECHANICAL
FIG. 2

No special flyers are required as the same ones may be used; however, they will turn from right to left or in the opposite direction to a clock. Also, the same bobbin gears and skew bevel bobbin gear drivers may be used. Nothing is changed except the main shaft direction and another gear in the twist train.

In applying the differential gear formula to a reverse twist frame, the reversal of the internal gear must be taken into account and the proper plus and minus signs must be used in the calculation.

In the foregoing, we have explained the mechanical

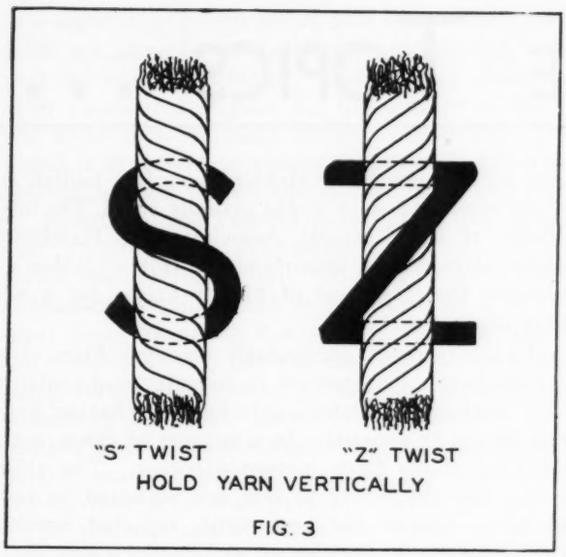


FIG. 3

operations for inserting twists into roving and compared the regular twist with mechanical threads as seen on bolts and screws; we did this because bolts and screws were in use long before rovings and yarns. It is possible that twist in roving was derived from them and given the terms of "right twist" and "left twist" which in time became "regular" or "reverse" and "clockwise" or "anti-clockwise."

Confusion, arguments, and misunderstandings have existed for a long time regarding twists and all because there was no standard definition that covered the subject fully. There was also tangled meanings between the mechanical operation and the actual twist itself. For example, the flyer turns clockwise when making the twist in the roving, and also a flyer which turns from left to right produces a twist that runs from the right obliquely downwards to the left and is called "right" or "regular" twist. In the last analysis, it is what we *see* when the roving or yarn is held in a certain position that governs the definition of twist, and not how it is made mechanically.

The American Society for Testing Materials have become interested in this subject and through its committee, D-13, (the textile committee), has formulated a definition. This definition, with its accompanying diagram, is passing on its way through the regular routine of the A. S. T. M. and will undoubtedly become the standard definition for twist in rovings and yarns in due time. This definition is as follows:

> *"Twist, Direction of——**
> *A yarn or cord has "S" twist if, and when it is held in a vertical position, the spirals conform in slopes to the central portion of the letter "S"; and "Z" twist if the spirals conform in slope to the central portion of the letter "Z." It is proposed to publish the accompanying diagram with the definition." (See Fig. 3.)*

In this definition, no mention is made of the mechanical process of how twist is inserted. It is what we *see* when holding the roving or yarn in a vertical position.

A life long habit can be overcome by forming a new habit. Old-timers who have been in the mill and yarn business for years will be obliged to forget twist terms, forget all about "regular" and "reverse," "right" and "left," "clockwise" and "anti-clockwise" twist and form a new habit of saying S-twist or Z-twist. What they will *see* when looking at roving or yarn in the future will be either S-twist or Z-twist.

On twisting machines, two "Zs" when twisted together will make one "S".

This little ditty may be of assistance to old-timers in forming the new habit:

When making twist
Be very bright,
For "S" is left
And "Z" is right.

*Credit for this definition goes to E. D. Fowle, associate editor of *Textile World*, who presented the new method in an article published in the August, 1934, issue of that publication.

Modern Blanket Cloth Room and Shipping Department

(Continued from page 43.)

be packed in the corrugated boxes, re-inforced with four steel bands, and sent to their destination. Should the goods have to be stored, they are packed in veneer boxes so that the moisture in the warehouse will not affect them. The corrugated box weighs 25 pounds and the veneer box weighs 60 pounds.

As orders for goods are to be filled, the checker rolls a truck to the bin and counts out ten pair at a time until he has loaded 160 single or 80 double blankets on it. He weighs it and if it is not within the standard weight, he checks his count again. When he is certain he is correct in his count he turns his truck over to the packer who inspects and re-counts the blankets by packing them in the case ten at a time. This gives a double check. The packer then fastens the case, stencils it with a number, and carefully checks his stencil number with the number on the ticket that is sent to the office. When unbaled goods are sent to the loose-stock room, a record is made in a book kept for that purpose. They are stored in bale lots and as they are brought back, a credit is entered opposite the place where they were debited to the stock room at the time they were sent there. The main office also keeps a record of goods sent back and forth to the loose-stock room and a perpetual inventory is maintained.

This cloth room is modern in both appearance and operation. The operatives are neatly attired in white uniforms and their positions and machines are place-marked with their names. When an executive of the mill comes in, it is not necessary for him to ask the overseer the name of a person; the glass name plates opposite each operative gives him that information. The room is air-conditioned and is equipped with modern lighting facilities.

Between 10 and 25 per cent of our income is used in the purchase of clothing and the volume of business in this field probably surpasses that of any other. Man still believes that he is made by clothes he wears.

◆

It has been said that clothing, more than any item, even home furnishings, contributes to our happiness —yet, how many of us consider this side of the question when we produce a yard of cloth?

CURRENT TEXTILE TOPICS ....

Talk of the Month

MID-SUMMER found the cotton industry more nearly in the appearance of normal than at any time for many years. For the first time in the recovery, except perhaps for the abortive movement of pre-NRA days, this industry has come into line with the general manufacturing tendency. A year ago somewhat similar conditions for the goods market existed, but there was the overhanging AAA and an artificial situation in raw cotton. With that obstacle removed, cotton manufacturers have come to the point where at long last, they can measure the market with the wonted yardsticks.

Cotton industry at last in line with general industrial progress

That curious, but explainable, phenomenon that buyers wait for a rising market to buy freely has been exemplified clearly in the goods market through the first part of the summer. The upward trend of cotton goods got under way before the drastic rise in staple, but naturally the latter was a stimulus to further strength in mill products. Meantime, conditions outside the cotton industry were such as to allay fears of a rise in goods to levels that might jeopardize the consumer market.

Costs of living are rising in many ways, but so is public purchasing power. That is the normal way of recovery. For a matter of years the heavy industries were in the doldrums and this situation retarded the tendency of the consumer industries toward normal. The recent signs that heavy industries have been closing up the gap in progress and promise to show a further quickening activity are a source of encouragement to business men in all lines.

Higher prices for cotton goods should not be a bugaboo for a long time, considering the low levels at which they stood preliminary to the upward start. Frank I. Neild, president of the National Association of Cotton Manufacturers, notes that "cotton, contrary to the popular conception, has not lost its market and the consumption of cotton goods today is greater than back in the era of multitudinous petticoats."

Mr. Neild said at mid-July that "the immediate future for the cotton goods industry is reasonably bright. Cotton goods are in demand and there are no appreciable stocks anywhere in the channels of distribution. Raw cotton of good grade and staple is scarce and the predictions indicate that the coming crop will be relatively small. This would seem to insure that cotton goods prices will show a gradual but steady increase."

Situation Predicted Stable

On the long-range outlook, the same authority is more hesitant. Looking at general conditions, especially in commodities, it is difficult to see anything but a firm situation for a long time. As in cotton, so in many of the commodity staples there is a bullish statistical condition, with stocks actually small. The latest bulletin of the National Association of Purchasing Agents stressed the importance of this situation and indicated the likelihood of higher prices for a wide range of staples.

Higher incomes, particularly among holders of securities, better employment in industry and continued relief work are contributing to help purchasing power keep pace with demand. In a number of cases, manufacturing plants have increased wages. The ability to buy and the desire to buy are reflected in retail business. One of the best signs, reported manifest in all divisions of textiles as well as elsewhere, is the restored demand for quality merchandise and neglect of the purely "economy" constructions of the depression days.

Seasons are one of the banes of the textile business and it is worthy of stress that efforts are being made to get away from period trading. The wool industry, on the old basis, was normally a seasonal proposition. But manufacturers in that branch were not satisfied and they worked to make for their goods an all-year market.

Now we hear that manufacturers of styled lines in cotton are chafing at the "season" idea and talking of plans for more uniform selling together with more even production through the year. Mill men propose to get buyers away from the idea of spring and fall lines. This is a proposition not entirely new, but still not widespread. What is wanted, according to the *New York Journal of Commerce*, is that a few fast-selling styles may be prepared and others follow as the taste of the trade is whetted for more.

Possibilities of a broad outlet for cotton through government auspices under the highway construction plan seem to be following predictions. The AAA has reported requests already from 32 states for cotton fabric and cotton mats. Estimates indicate, says the AAA, that the requests for fabric involve construction of more than 575 miles of road. In addition, the requests call for thousands of cotton mats for use in curing concrete highways.

THIS DISTRICT has seen a further mixture of the disastrous and the encouraging for cotton textile manufacture during the past month. Perhaps it was a case of darkest before the dawn when liquidation of the Amoskeag Manufacturing Company, Manchester, N. H., largest unit of its kind in the world, was recommended by the master in hearings on the proposed reorganization. At the time of writing there was small hope of restoration of the Amoskeag. But, in Massachusetts particularly, there was hopeful talk regarding the cotton manufacturing outlook.

New England Mill Situation

Failure of the Amoskeag was the crowning disaster

in a wave of mill destruction over many years, precipitated not alone by competitive conditions but in large part by onerous taxation. The city of Manchester, after years of disregard for the welfare of the mills and after they had been driven to insolvency, finally found it expedient to reduce the taxes in the hope of thereby helping toward the re-opening of the plant.

Meantime, the Federal government had extracted over $2,000,000 in processing taxes from this one cotton manufacturing unit. Although such taxes were subsequently adjudicated by the Supreme Court as illegal, the government has refused to make refund of the sum. It is very obvious that such a sum would go far toward restoration of a plant even as large as the Amoskeag and that, therefore, the Federal government is once more obstructive rather than helpful to private business through its 1936 revenue act which circumvents refund of paid processing taxes.

In the master's findings, the effect of changing styles was a factor in the disaster to the mills, but ruinous local and Federal taxation, together with the damage of some $2,000,000 from the flood in March appear to have been the chief obstacles to a recommendation in favor of reorganization. The matter was still up to the judge of the Federal District Court for decision after the master's finding and the former's action no doubt will have been taken by the time this is published.

Massachusetts leaders of cotton manufacture, marking the plight of the Amoskeag, were congratulating themselves over a new spirit of legislation promising much for industry just at a time when the cotton textile situation begins to look up for New England. Frank I. Neild, president of the National Association of Cotton Manufacturers, said that an object lesson for Massachusetts in its dealings with the textile industry is provided by the fate of the Amoskeag.

"For many years," he stated, "Massachusetts overlooked the interdependence of the community and the cotton industry; more than half of Massachusetts' cotton industry was wiped out as a result of untimely legislation which made the competitive advantages of other industrial States nearly insurmountable." He said that, if the law substituting an excise state tax for local taxation of machinery "can be looked on as a definite indication that Massachusetts now wants to retain what is left of its industries, manufacturers can be decidedly more hopeful of the future and industrial workers and industrial communities can face the future with a greater sense of economic security. The reduction in operating costs effected through the saving in taxes will not be sufficient to entirely offset the higher wages paid in Massachusetts in competition with lower-wage states, but it will be a material help."

Mr. Neild reviewed the history of the cotton textile industry from its growth as a one-shift industry to a double-shift basis as a result of the war demand, followed by the establishment of the latter under the NRA as a general proposition. From this developed, through necessity, a scrapping of machinery. "It would now seem that productive capacity, even on a double-shift basis, is approaching the normal consumption of cotton goods."

Representatives of 34 textile corporations were called by James T. Moriarty, state commissioner of labor and industries, to a conference on operations under the six o'clock law, because of some confusion as to three shifts. The commissioner explained that three shifts were permitted on certain types of machines and not on others. All, it was stated, agreed to his ruling.

The commissioner subsequently gave an optimistic report on the outlook in Massachusetts, stressing particularly the spirit of co-operation among textile executives. Incidentally, he said that "if other states offer our industrial plants lower taxes and no rent, we must meet them on their own ground. In a sense we did just that during the past year when we took the tax off machinery. Sooner or later, there will have to be national legislation to prevent one state from stealing another's industry."

Meantime, with orders in the cotton industry at large running ahead of production through the middle of the summer, the New England mills were profiting along with others. In the leading centers of manufacture reports were heard before the last of June that operations were picking up. In New England, too, as elsewhere, the reports of retail stores were encouraging as a barometer of increased public purchasing power. Fall River, from a position of considering new curtailment a few weeks ago, was running 90 per cent.

What the Southern Mills Are Doing

Sellers Manufacturing Company, Saxapahaw, N. C., is installing some modern machinery and equipment. A new engine has been purchased and 17 long draft spinning frames are being installed. Improvements are also being made on the mill building.

Fort Payne (Ala.) Hosiery Mills are building an addition to their plant that will be 40x80 feet and will house some 25 new machines.

Walton Hosiery Mills, Inc., Tallahassee, Fla., have filed papers of incorporation with 50 shares of no par value stock.

Harmony Grove Mills, Commerce, Ga., have completed the installation of an Entwistle high-speed warper and two Abbott high-speed winders.

The Barrow County Cotton Mill, Lawrenceville, Ga., which has been idle for the past three years, is expected to re-open.

Foster Knitting Company, Burlington, N. C., has installed four additional full-fashioned hosiery machines and auxiliary equipment.

A charter has been granted the Finer Full-Fashioned Hosiery Company, Charlotte, N. C., with authorized capital of $100,000.

It is understood that the Durham (N. C.) Hosiery Mills have leased the old North State Mills property to the Georgetown Silk Company, Wilkes-Barre, Pa. The Georgetown Company has begun the installation of throwing machinery and operations will begin soon.

Durham (N. C.) Hosiery Mills have purchased three additional high-speed full-fashioned hosiery machines.

Trenton Cotton Mills, Gastonia, N. C., have completed a new brick addition to their building.

The Ellis Hosiery Mill, Inc., has been granted a charter to manufacture hosiery and will be located at Hickory, N. C.

Darlington (S. C.) Manufacturing Company has installed 78 additional used looms.

The Denton (Tenn.) Hosiery Mills have begun operations and plans are to add more machines in the future.

Niota (Tenn.) Silk Hosiery Mills has erected a new building and ten large modern machines have been installed therein.

Pacific Mills, Lyman, S. C., has arranged for work to begin on an $80,000 addition to its plant. This new structure will be an extension of one of the present plants and will provide manufacturing and storage space.

Unit No. 3 of the Lincoln Mills, Huntsville, Ala., has installed a new humidifying system.

Dwight Manufacturing Company, Alabama City, Ala., will build a $900,000 addition to its mills, it is reported.

Eastern Manufacturing Company, Selma, N. C., have announced plans for modernization and an addition to the Lizzie unit of their plant. Contracts have been placed for about 10,000 spindles of long draft spinning, new picking, and drawing machinery. Plans include the complete renovation of the village also.

A new full-fashioned hosiery mill is to be located at Panama City, Fla., it was announced, and work has begun on a building 50x100 feet to house the first installation of five knitting machines.

The Union Division of the Consolidated Textile Corporation located at LaFayette, Ga., will re-open. This plant was re-organized under section 77-B of the Bankruptcy Act.

Whisnant Hosiery Mill, Hickory, N. C., is having an addition built which is to be 105x110 feet, and which, it is said, will make the plant one of the largest of its kind in that section of North Carolina.

The plants of the United Spinners, Inc., Nos. 1 and 2, the Peerless Spinning Company, located at Lowell, N. C., and the Insulating Yarns, Inc., Charlotte, N. C., have been purchased by W. L. Balthis and associates, and will begin operations immediately.

COMMENT ON THE COTTON MARKET

New Orleans, July 17, 1936

THE TREND of the cotton market remained upward during the past month. In fact values scored a further sharp advance, bounding to the highest level of the season. Of late, however, there was some recession in the market, due to more favorable crop weather, hedging and realizing. Nevertheless, the market, compared with one month ago, shows a rise of about $5 to $6 per bale. Contributing to the further improvement in values was the government's estimate covering this year's cotton acreage, which was 30,621,000 acres, or only 9.8 per cent larger than last year's area of 27,888,000, which was smaller than generally expected. There was no let up in the demand for cotton goods. Domestic consumption continued large, and exports of raw cotton from the United States held up well.

The general business outlook remains favorable, which is reflected in active trading at points of distribution, especially as regards cotton goods in the United States and England where the mills are running at full speed. The situation is not so favorable on the Continent or in Japan. In the Orient mill business is said to be very poor at this time. So far as America is concerned, the reported favorable cotton textile situation is confirmed by recent Census returns showing June domestic consumption to have been much larger than for the corresponding month last year. American mills are reported to have greatly reduced their stocks of unsold goods and have built up a good backlog of unfilled orders, which seems to assure a high rate of mill activity for some months to come.

CENSUS REPORT

United States—Bales—	This season	Last season
Consumption of lint in Cotton Growing States, in June	470,000	312,000
In New England States	71,000	55,000
In All Other States	15,000	17,000
In the United States	556,000	384,000
In Cotton Growing States, eleven months	4,821,000	3,984,000
In New England States	750,000	765,000
In All Other States	165,000	221,000
In the United States	5,736,000	4,970,000
Mill stocks, June 30th	987,000	885,000
Stocks in public storage and warehouses, June 30	4,526,000	6,069,000
Stocks in mills, public storage and warehouses, June 30	5,513,000	6,954,000
Stocks in mills, public storage and warehouses, May 31	6,327,000	7,556,000
Active spindles during June	22,957,000	22,704,000

BRITISH BOARD OF TRADE REPORT FOR JUNE

Year—	1936	1935	1934
Exports of yarn, pounds	12,000,000	12,000,000	11,000,000
Exports of cloth, yards	130,000,000	138,000 000	149,000,000

AMERICAN COTTON

August 1 to July 17— Bales—	This season	Last season
Brought into sight (marketed)	13,000,000	9,365,000
Exports from U. S., including Canada	6,156,000	4,954,000
Spinners' takings (world)	12,792,000	11,284,000
Stock in all U. S. ports, July 17	1,289,000	1,118,000

DISTRIBUTION OF SPINNERS' TAKINGS OF AMERICAN, AUG. 1 TO JULY 17.

Bales—	This season	Last season
Southern mills	5,466,000	4,359,000
Northern mills and Canada	1,505,000	1,484,000
European mills	4,200,000	3,524,000
Oriental mills	1,621,000	1,917,000
Total, world	12,792,000	11,284,000

WORLD'S VISIBLE SUPPLY OF COTTON, JULY 17

Bales—	This year	Last year
American	3,712,000	3,689,000
Other kinds	1,818,000	1,624,000
All kinds	5,530,000	5,313,000

According to advices from the spot markets, the demand for old crop cotton continued during the first half of July, but is decreasing each day as mills gradually acquire enough cotton to go into the new season. The basis remained high. There is a good demand for new crop shipments from American mills and considerable business has been booked. The demand from foreign countries, however, is as yet very small, due probably to outside growths beginning to compete more heavily with American.

Outlook for the Growing Crop

There is change for the better in the new crop outlook, due to the recent breaking of the drouth in the eastern belt and beneficial rains in the central belt and Texas. However, more moisture is said to be needed in many districts of the South Atlantics, and a general heavy rain is wanted in Oklahoma and the Texas panhandle. In the eastern belt the crop is reported to be late. As to its final outturn, much will likely depend largely on the date of killing frost. The weather has been hot with rains and scattered showers over much of the belt. Of late there were further beneficial rains east of the Mississippi river. To the west of the river, rain is wanted in the north portion, and moisture will likely be needed again if rains are delayed much longer in other sections of the western belt, as the precipitation in Texas thus far is less than normal, which is not favorable in event of a dry August.

TOTAL AVERAGE RAINFALL IN TEXAS, IN INCHES

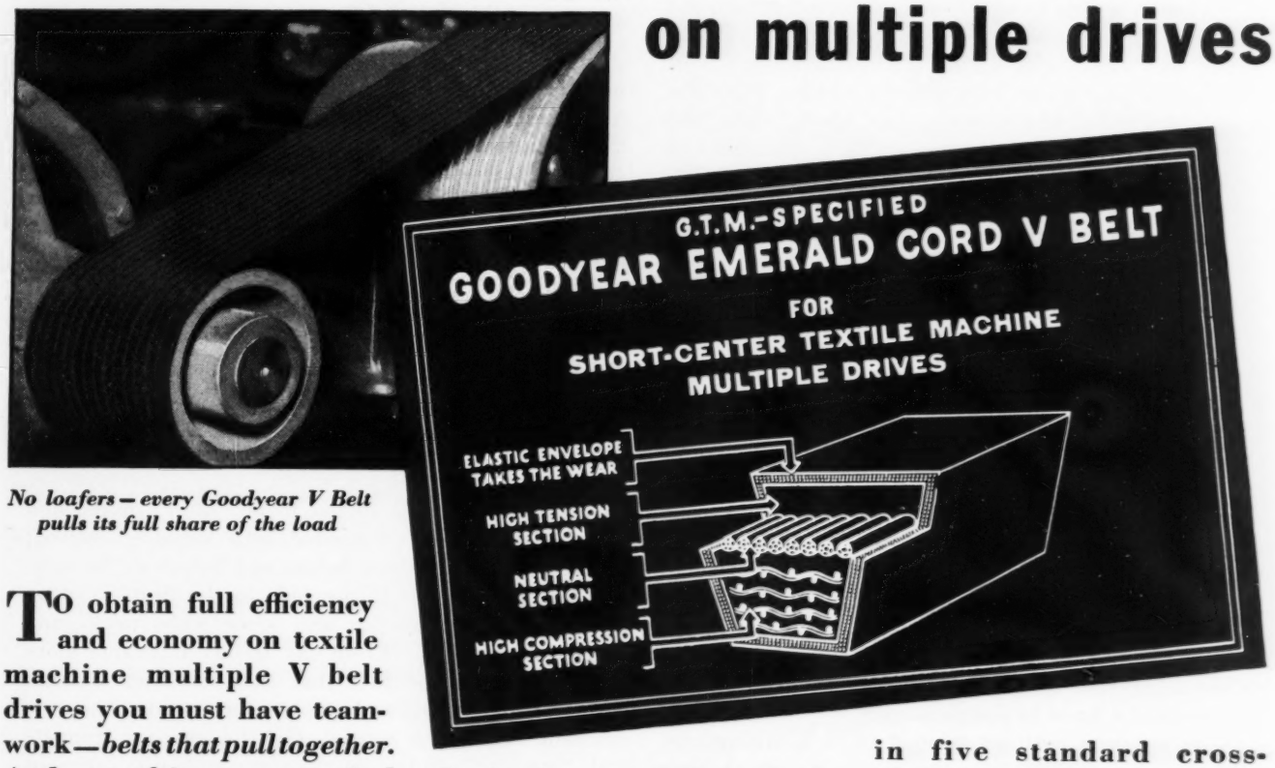
Year—	1936	1935	1934	1933	Normal
June	1.61	5.07	0.81	0.78	2.96
November 1 to June 30	17.40	26.17	17.61	16.36	19.64

An example of the law of diminishing returns: "Textile plants operating under government supervision."

◆

Texas leads all other states in cotton production, livestock, petroleum, sulphur, and mohair.

You need their PERFECT TEAMWORK on multiple drives



No loafers — every Goodyear V Belt pulls its full share of the load

To obtain full efficiency and economy on textile machine multiple V belt drives you must have teamwork—*belts that pull together.* And out of its own practical mill experience Goodyear has perfected its famous Emerald Cord V belts that do just that! Every set is matched in length and elasticity and absolutely accurate in cross-section to fit the sheaves with uniform grip and pull — *a perfectly balanced drive.*

As a result every belt carries its full share of the load. There are no loafers — no premature failure of overworked members. You get maximum service from every belt because the load is carried by high-tensile, low-stretch, endless cords — located in the neutral section where there is no tension or compression when flexing over pulleys — a Goodyear-originated construction that eliminates internal friction and insures amazingly long flex-life and fatigue resistance.

These *mill-proved* belts are made in five standard cross-sections and in a complete range of standard lengths. Each installation is made on individual specification by the G. T. M.—Goodyear Technical Man—to assure accurate fit and faultless performance. Let this practical beltman show you what perfect teamwork means on multiple drives. To bring him to your mill, write Goodyear, Akron, Ohio, or Los Angeles, California — or the nearest Goodyear Mechanical Rubber Goods Distributor.

Emerald Cord V Belts

BELTS
MOLDED GOODS
HOSE
PACKING
MADE BY THE MAKERS OF GOODYEAR TIRES

THE GREATEST NAME IN RUBBER

GOODYEAR

"THE SITUATION"—as Seen Across the Executive's Desk

July 15, 1936

LOOKING over my "scrap-book" today I find that the last month was just one surprise package after another. After having spent all my life associated with the cotton industry and thinking I knew all the answers I find that mine were not like those in the back of the book. Watching the developments in the textile industry during the last month has been like working one of these darned jig-saw puzzles. Work—and work—and see no picture forming out of the mass of pieces and then, all of a sudden, place the catch-piece upon which hangs the whole story and presto! In a few minutes the puzzle is finished and we have "Custer's Last Stand" or "The Battle of Gettysburg". I'll have to admit that so far, however, I have not yet found the catch-piece to this puzzle, but I am beginning to see a picture.

Conventions are Good Things

One of the first surprises I had was at the Southern Textile Association Convention at Blowing Rock, N. C. I always attend these sessions. I believe in keeping in touch with the operating executives because they are a most important factor in the successful manipulation of the textile industry. A mill can only be as good as its superintendent. No matter the scope of the office brain-trust the success of the plant depends upon the ability of the operating executive to keep his finger on the pulse of the mill, and to be on the alert to read its slightest fluctuation. I like to meet the operating executives of other mills. I want to see what kind of fellows my own superintendents and overseers have to compete with.

The program outlined seemed to be a strong one, but when I actually sat in the meetings, which were mighty well attended, I realized that three of the outstanding leaders in the entire industry, Donald Comer, president of the American Cotton Manufacturers Association, Robert West, president of Riverside and Dan River Cotton Mills, and Dr. Claudius T. Murchison, president of the Cotton-Textile Institute, Inc., were speaking from different angles but along the same subject to the members of the STA, as man to man. Each speech urged better understanding between mill owners and operating executives and operators, themselves.

The Tariff "Raise"

Important economic developments began when the rate on duties on controversial textile imports from Japan was increased approximately 50 per cent to become effective June 20. It is problematical whether this actually had anything to do with the revival of market interest in textile goods but from that moment on the market kept broadening and has by now gained considerable momentum which promises to last indefinitely. Interest in all types of cotton goods has been shown, and has been backed up, within the last week, by the bids put out by the Government for 8,622,000 yards of cottons for the WPA.

Faced on one hand with the revived sales enthusiasm of cotton manufactured goods cotton textile executives were pressed on the other by the realization that they were in a tight spot situation for cotton. Strange to say, and despite warnings put out by one alert trade association to its members, executives were not covered on their cotton past the spring months.

The Cotton Shortage

I was no more farsighted than the others, and I am surprised at myself for being asleep on the job. Back there in April I thought the industry was picking at the coverlets and I was not sufficiently interested to even inquire into the cotton situation. Suddenly, when business started picking up—when inquiries started coming in, I realized I was short. In fact, I was damn short! I just drove to the nearest airport and took a plane down to the Mississippi Delta, determined to be on hand and get what I could out of shippers and out of the government loan cotton when the Commodity Credit Corporation announced it would open its pool. Well sir, when I got down to the Delta I thought it was circus day. Folks had gathered from all over. New England and southern mills were represented by their cotton buyers. Cotton merchants from all points were in town.

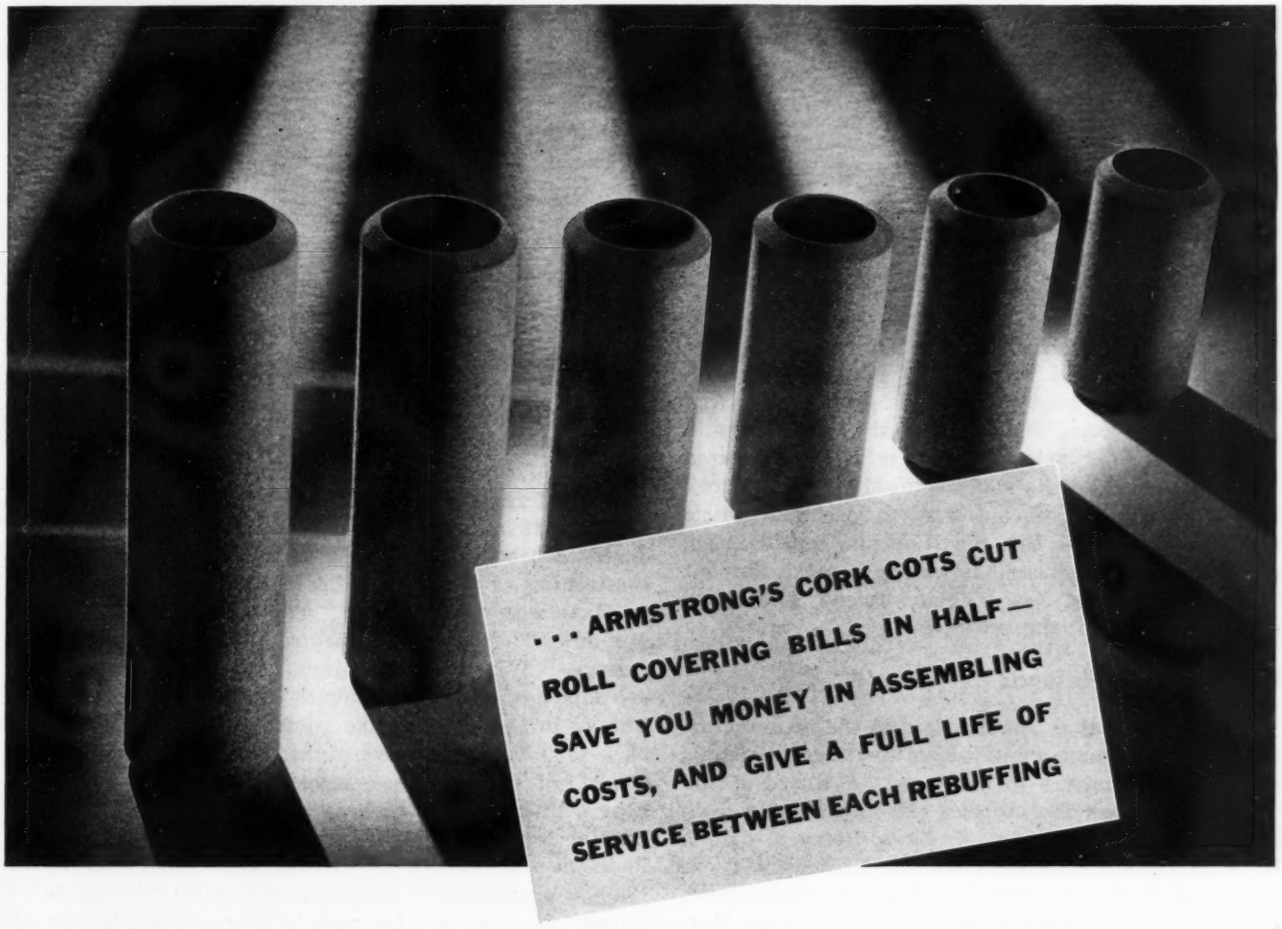
I spin long staple cotton in one of my mills, and 1 1/16 in another. I needed both kinds. I walked down the line of factors' tables and looked at the samples laid out. I put in my bids to the Staple Cotton Co-operative Association and some were taken and some were too low. From day to day I became more impressed with the fact that there was not enough cotton of good grade and staple to go round. The government loan cotton consisted of the leavings from its last "opening" and culls in any commodity are not worth bragging about. The basis was jumping like a grasshopper—but jumped higher every time. Buyers were taking 1931 crop (proved that year to lack improper breaking strength) and glad to get it.

I walked down to the hotel after a hard hot day over the classing tables and saw an old friend from New England. He looked mighty sick. I thought perhaps he had had a sunstroke or a touch of heat prostration. Gosh, he was the palest man I ever saw. Then he told me his story.

When his mill received inquiries on new business and things had been quiet for so long they just broke loose and sold for forward delivery four million pounds of yarn. Then, he came south to get the cotton. "I can't find enough to spin one million pounds—and it is priced so high I'll lose money on every pound I deliver", he said.

That was the way it was and from all I can hear that is just the beginning. The cotton shortage is a new story in this business but it will be an old and sad one before we see a bountiful supply again. I know my production manager will have to do some real work to spin our quality yarn from the cotton I was forced to accept! Perhaps we shall change the construction—it is a real problem for my operating executives.

YOU PAY *No Premium* FOR THIS BIG SAVING IN ROLL COVERING EXPENSE


. . . ARMSTRONG'S CORK COTS CUT
ROLL COVERING BILLS IN HALF—
SAVE YOU MONEY IN ASSEMBLING
COSTS, AND GIVE A FULL LIFE OF
SERVICE BETWEEN EACH REBUFFING

COMPARE the prices of roll coverings, and you'll find they're all about the same. Compare their "in service" savings, and you'll find that Armstrong's Cork Cots mean worth while reductions in roll costs *right from the start!* Over a period of time, mill owners report, these all-cork coverings save you up to 50%.

Armstrong's Cork Cots bring you these economies in three ways:

First, these cots save you money because they *eliminate expensive application costs.* Armstrong's Cots are tailor-made at the factory to fit each mill's rolls. They're quickly and easily assembled. And when buffed to a fine finish, they offer an ideal spinning surface that is resilient, constant in density, true and concentric.

Second, these cots save you money because they *last longer.* They're rugged and durable. Each time they are put into the frame, these cots give the average service of a normal spinning roll.

Third, these cots save you money because they *can be made new again,* easily and inexpensively. Rebuffing costs only half a cent a roll. And many mills find that they secure as many as five, six, and even more rebuffings on each Armstrong's Cork Cot.

Besides these money-saving features, these cots offer other important advantages. They're manufactured by Armstrong's patented *tubular* process which insures extra cushion and constant density from end to end. As a result, they permit spinning of stronger, more uniform yarn; reduce end breakage; minimize hard ends and top roll laps. Today, more than 6,000,000 active spindles are on Armstrong's Cork Cots. Write for detailed information about these cork cots that have already won the preference of more than a quarter of the industry. Address Armstrong Cork Products Company, Textile Division, 923 Arch Street, Lancaster, Pennsylvania.

ARMSTRONG'S *Extra cushion* SEAMLESS CORK COTS

for spinning and card room rolls

ARMSTRONG HAS MADE CORK PRODUCTS SINCE 1860

To top the present shortage of spot cotton, the government's acreage estimate came out short about a million acres. The future market jumped up considerably with the news and it is predicted now that there will be such a scramble for the first new crop cotton to be moved that prices on it will be almost prohibitive.

The Price Trend

As a result of the cotton situation, coupled with excessive demand for cotton goods and low inventories on cotton goods stocks of all types, many mills withdrew prices altogether. I can't remember when the cotton goods situation has been so thoroughly sold ahead as at present. Those mills which did not withdraw prices raised them. Aberfoyle Mfg. Company raised yarn prices 1 to 3 cents on 2-ply mercerized combed peeler yarn and other mills followed suit proportionately on June 25. Two weeks later an additional raise of similar amounts was placed on all mercerized yarns. Carded yarn prices jumped and cloth goods of all types kept up with the general rise. And yet, prices on cotton advancing as they have are still not profit-making prices for the mills. Raw cotton basis soars ahead of its manufactured products prices. Mill executives who do not want to lose their shirts should certainly take this condition into consideration when accepting business. It will be a tough day for those who, like my New England friend, sold ahead and failed to count the cotton costs.

Processing Tax Refunds

And while that is the situation in the manufacturing end of the game we still have the nagging details of legislative matters to harry us. A Board of Reviews for Process Tax Appeals was appointed, to consist of L. S. Cannon, Wm. K. Laws, Percy S. Crewe, H. S. McDonald, Jr., and John W. Edwards. These men were all lawyers from the Treasury Department. The appointments were designated by Secretary Morgenthau under Title VII, Section 906 (B) of the Revenue Act of 1936. The duty of the Board is to review decisions by the Commissioner of Internal Revenue allowing or disallowing claims for refunds of processing taxes under the terms of the act.

Preparation for refunding millions of dollars in floor stock taxes on cotton goods went rapidly ahead as the Bureau of Internal Revenue prepared to distribute nearly one million blanks to various district collectors of Internal Revenue from whom claimants will be able to obtain them. Two types were printed, one for wholesale and one for retail stocks.

Then, the announcement came from Washington that returns under the windfall tax provisions of the 1936 Revenue Act for taxable years prior to the date of enactment of the tax law must be filed by September 15, 1936. The Cotton-Textile Institute had argued vigorously before the Finance Committee that there was no unjust enrichment to the Cotton Textile industry as a result of the processing tax decision and therefore no occasion for any windfall tax but the argument did not prevail. The Revenue Act of 1936, Title III, relates to the income tax at the rate of 80 per cent on unjust enrichment. In plain English it simply means that the cotton textile industry must pay 80 per cent tax on all processing tax monies which were impounded or in escrow before the processing tax was declared unconstitutional and which was released to the mills upon the Supreme Court's decision adjudging the processing tax unconstitutional.

The returns will have to be filed by September 15, but whether the mills will pay that tax remains to be seen. I do not believe they will pay without a fight first. Certainly there was no unjust enrichment there but there will be unjust enrichment for the government if such a tax is collected.

Last month we talked about the meeting in Charlotte, N. C., of the board of governors of the American Cotton Manufacturers Association and Dr. C. T. Murchison of the Cotton-Textile Institute. As a result of that meeting and plans formulated there a letter embodying the program of that association with regard to maintenance of code hours and wages in cotton mills was mailed out to all cotton textile mills. The letter was in reality a statement of policy and a questionnaire asking if the mill in receipt of the letter was conforming, and if not in what degree, and if mill was desirous of co-operating to maintain code wages and hours and child labor standards. From answers received from mills a comprehensive survey of the industry can be had, with any suggested policies from conforming or non-conforming mills, all of which will be taken into consideration. This survey will be the groundwork from which future definite plans will emerge.

This has been a full month and an exciting one. Things in the textile game go from bad to good and back to worse almost overnight, it seems. It is certainly not monotonous. Occasionally we get a real good belly-laugh too, such as the AAA gave us when Chester Davis, Administrator of the Agricultural Adjustment Administration, in a gigantic report on the 1933-35 operations of the farm unit said: "Cotton is already used for a wide variety of purposes, but by far the greatest proportion of its production is devoted to manufacture of cotton textiles for which purpose it is ideally suited."

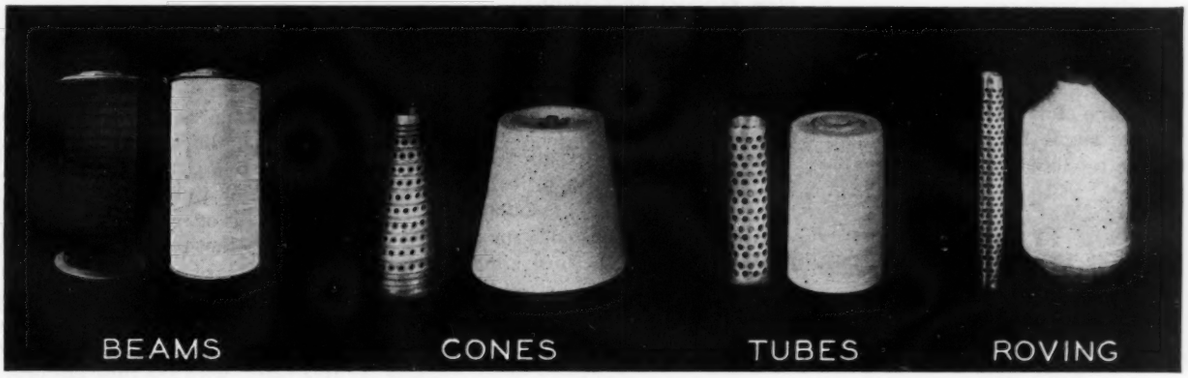
We Never Return Pearls

The manuscript rejection slip of the Chinese editor is a model of politeness as the following example indicates:

"Most honored brother of the Sun and Moon:

"Your slave is prostrate at your feet! I kiss the ground before you, and implore you to authorize me to speak and live. Your manuscript has permitted itself to be looked upon by us, and we have read it with enchantment. I swear on the tombs of my ancestors that I have never read anything more exalted. It is with fear and terror that I send it back. If I allowed myself to print this treasure, the president would immediately order me to use it forever as an example, and forbid me to dare to print anything inferior. My literary experience enables me to declare that such literary pearls are only created once in ten thousand years, and this is why I take the liberty of returning it to you."

Its performance speaks for itself



PROOF OF SUPERIORITY!

Through the ups and downs of business, Gaston County Dyeing Machines have stood the test of time. Our sixteen years of specialization in the making of combination beam, package and roving dyeing machines have seen many inferior machines come and go. Proof of superiority lies in the fact that more Gaston County Dyeing Machines are in use today than any other kind.

GASTON COUNTY MACHINES

Cover a complete range of Dyeing and are the most flexible machines on the market.

1. The adaptability of Gaston County Machines to beam as well as package and roving dyeing direct from frames.
2. Its replaceable parts.
3. Its superior acid and rust resistance.
4. Its perfect balance and rugged construction.
5. The unusual range of its 1 or 2 kiers—a range normally requiring 6 kiers.

Gaston County Dyeing Machines are constructed of high grade C. I. Nickel Iron, Ni-Resist Metal, Nickel Alloy, Stainless Steel or Monel Metal as desired.

GASTON COUNTY DYEING MACHINE COMPANY

Main Office and Plant: Stanley, North Carolina, U. S. A.

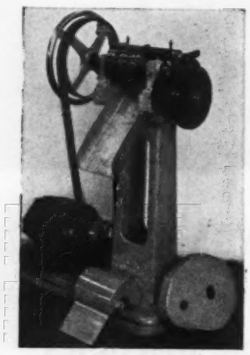
Sales representatives: T. H. McKinney, Jr., Burnham & Ingalls, 50 Church St., N. Y. C.

Builders also of Combination Bleaching Machines, Combination Extracting and Drying Machines, Warper Density Controlling Devices, Variable Speed Hot Waxing Machines for Thread Finishing

NEW TEXTILE EQUIPMENT AND PUBLICATIONS . . .

New Cutter Produces Staple from Cellophane

F. J. Stokes Machine Company, Philadelphia, Pa., has developed a special machine for cutting cellophane bands into staple for mixed spinning. The staple produced by this machine is



Cellophane staple cutter

said to be suitable for use in making lame cloth or specialty yarns.

The machine has a 20-blade knife which operates at approximately 750 r.p.m. with synchronized feed for the cellophane. It makes about 15,000 cuts per minute, being driven by a ¼-h.p. motor. All moving parts are guarded and the multiple-blade knife is carried in adjustable roller bearings.

Addition to Line of Automatic Control Instruments

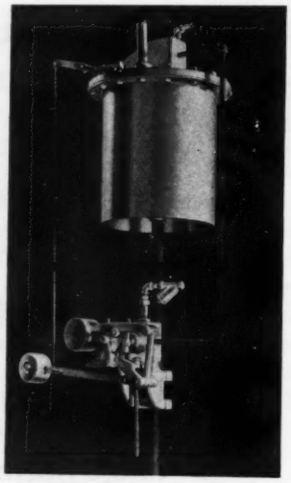
The Bristol Company, Waterbury, Conn., manufacturers of control instruments, has announced a new pneumatic-type controller for temperature, pressure and liquid-level. This new instrument, which is known as the Model 90 Controller, has been developed to take care of the many requirements for automatic temperature and pressure control that do not warrant a chart record, and also, for applications where recording instruments already are in use. An outstanding feature of this small, compact instrument, is its precision measuring element, it is said. The Model 90 Controller is equipped with a wide-range sensitivity adjustment. It can be changed from direct to reverse acting, or vice versa, by the user without additional parts. The case is moisture-, fume-, and dust-proof. It may be had in either of two forms: for the wall and for flush panel mounting. The controller is described in bulletin No. 444.

New Product by Campbell

John Campbell & Company, 75 Hudson St., New York, manufacturers of aniline colors and coal tar products, have added to their line of sulphur greens a new dye, Amalthion Bright Green 3 GY Conc. This color is a straight dyestuff and is said to contain no yellow or other shading agent. Amalthion is recommended for the dyeing of raw stock, yarn, and piece goods. It is said to be suitable for machine and jig dyeing.

Addition to Morehead Line

The Morehead Manufacturing Company, Detroit, Mich., makers of the Morehead Back-to-Boiler systems, have announced the addition of the Morehead Midget direct pressure boiler feeder to their line. This unit brings to boilers up to 10 h.p. the advantages of return trap practice. Remote control, an exclusive Morehead feature, is



Direct pressure system

based on the tank being independent of the valve mechanism. As a result, the tank may be placed in a normal operating position above the boiler while the controlling device remains within easy reach.

The Morehead Midget handles both condensation and makeup water. The resulting high feed water temperatures reduce strains due to expansion and contraction, help maintain constant steam pressure, and eliminate danger of low water. It is said that with this unit there is a substantial saving in fuel, water and steam, and that the unit requires no further attention once it is installed.

Controlled Atmosphere Annealing Furnace for Pressure Tubing

Steel and Tubes Division, Republic Steel Company, Cleveland, O., recently completed the first controlled-atmosphere furnace installation for the continuous heat treatment of steel tubing. The purpose is to permit the heat treatment of metals at a temperature above the oxidizing point without the formation of scale, as a means toward uniformity—in material, wall thickness, hardness, surface and grain structure—an important requirement of pressure tubes.

"Electrunite" tubes, made by this company, are of carefully controlled open-hearth hot-rolled strip steel, pickled to remove all scale. This strip is sheared, cold-formed into a butted tube and continuously electric-resistance-welded by the Johnston process. At this point, with the tube uniform in chemical analysis of the material, wall thickness and surface "normalizing" is necessary to secure uniformity of grain structure and hardness. These tubes are normalized after welding, i.e., they are heated above the upper critical temperature and cooled in air to produce a complete re-crystallization of the steel. This normalizing was formerly done in a conventional furnace, with resultant irregular scale, and when this scale was removed by pickling, sandblasting or cold drawing, the original surface was destroyed to some extent.

The new controlled-atmosphere electric furnace was installed to provide this normalizing. This unit, said to be the largest of its kind ever made, is composed of the electric furnace, 36 feet x 4 feet 4 inches inside, and the cooling chamber, which is 78 feet long and is connected to the furnace and water-jacketed so that the cooling rate may be controlled.

The operation of the furnace is continuous. Tubes are carried through it and the cooling chamber on live rollers, at the rate of 5,000 pounds per hour. A reducing gas, made by partially burning illuminating gas, is passed through a refrigerating unit to remove all moisture, and is fed into the furnace, to prevent oxidation, at a rate which always keeps the furnace and cooling chamber slightly above atmospheric pressure, so that all leakage is outward, and this leakage is burned at both the entrance and exit doors of the unit. Temperature controllers are used to maintain the desired temperature, which is approximately 1,650 degrees F., which, it is explained, has been found to yield a steel of fine grain size which, though ductile and easy to roll, is tough and uniform in its physical properties. The length of the cooling chamber was de-

Lively SPINNA CALF

Chases SPINNING ROOM TROUBLES

The *natural* resiliency of "Lively" Spinna Calf keeps it smooth, flexible and *kind to the yarn* for as much as 18 months or more in front line positions.

NO TROUBLES ON MONDAY MORNINGS or after longer shutdowns. Spinna cots spring back into shape at once, protecting the yarn.

END BREAKAGE CUT TO THE BONE by the lasting good cushion of "Lively" Spinna Calf.

ORDINARY HARD ENDS WON'T CREASE "LIVELY" SPINNA, which becomes smooth again instantly.

NO TROUBLES FROM LAPPING UP—Due to special process of "Lively" Spinna Calf.

BORDEN MILLS
KINGSPORT, TENN.

One of America's leading producers of grey goods appreciates the great advantages of "Lively" Spinna Calf for spinning room efficiency.

Use calf because it's "Lively" — *choose Spinna because it's Lawrence*

A. C. LAWRENCE LEATHER CO.

SPECIALISTS IN TEXTILE LEATHERS

BOSTON, MASS. PEABODY, MASS. GREENVILLE, S. C.

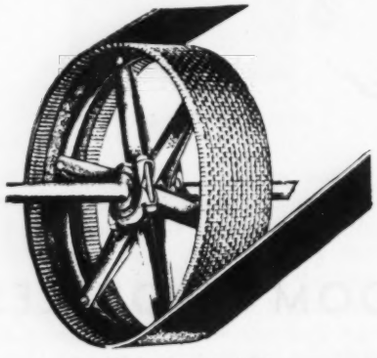
2455

signed so that with the desired rate of cooling the tubes leave at a temperature at which scaling will not take place.

After normalizing, the tubes are carried by a roller conveyor into a gas-fired furnace which is maintained at a temperature of 650 degrees F. This imparts a light blue oxide coating to the tubes, similar to the blueing on a gun-barrel, which, it is thought, will serve in some measure to prevent rust in shipment and storage. After blueing, the tubes are straightened, lathe-cut to length, and hydraulically tested to an internal pressure of 2,000 pounds per square inch while two air hammers jar the tubes.

Contrasit Belt Bandages

K. V. Wissing, Scann-American Sales Service, 200 Broadway, New York, N. Y., is distributing a folder explaining the use of Contrasit Belt Pulley Bandages which, it is claimed, eliminate the slipping of belts and the



"Belt bandage"

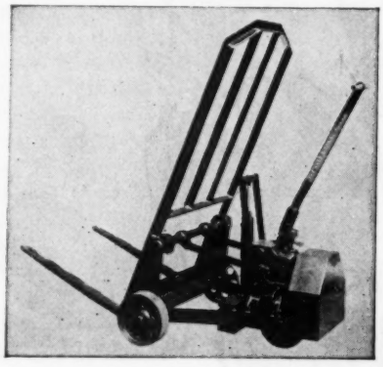
subsequent loss in efficiency. This product has been in use in European factories during the past several years and it is said that over 25,000 factories on the Continent have proven its innovation a profitable one. One test cited by the company revealed 13.70 belt slippage feet with plain pulleys and 3.08 belt slippage feet with Contrasit-covered pulleys.

New Dye from Carbic

Carbic Color & Chemical Co., Inc., 451-53 Washington St., New York City, makers of aniline colors, dyestuffs and chemicals, have released a folder containing samples of dyed yarn explaining their newest addition to their line of dyestuffs, Indigosol Olive Green IB. It is said that it produces dyeings of a high degree of fastness on cotton, viscose and cuprammonium rayon, and on mixed fabrics of these fibers. It is especially recommended for use on hangings and furnishing fabrics because of its fastness to light. This new dyestuff is dyed on the fibers mentioned here by the nitrite process. It is easily soluble and readily developed.

Fork-Type Pallet Truck

The Yale & Towne Manufacturing Company, 4530 Tacony St., Philadelphia, Pa., have published a new type lifting truck with tilting forks and counterweighted front end that will load easily from the wooden pallets on which many shippers send their goods now-a-days. It will handle both single-faced and double-faced pallets and one man can operate it. The truck has



New lifting truck

a multi-stroke head; a few easy strokes on the handle will lift the load, tilt it to ride safely, and the operator may move it to the destination on ball bearing wheels.

A large hydraulic release check mounted between the lifting head and the load rack facilitates the easy dropping of the load when the operator exerts pressure on the treadle located alongside the head. The truck is of simple construction and all wearing parts are easily and thoroughly lubricated.

Ruggedwear Resurfacer

Flexrock Company, 800 N. Delaware Ave., Philadelphia, Pa., have published a new folder describing their product and explaining the advancement of the ruggedwear resurfacer. The folder brings out the salient points of the product and offers engineering service to study a problem where Ruggedwear Resurfacer might be employed to correct bad floors.

Silent Chain Drives

Ramsey Chain Company, Inc., Albany, N. Y., have prepared a data book on "Silent Chain Drives" that is a concise reference book to those interested in power transmission. It carries illustrations of various applications of chain drives and explains that the chain drive combines flexibility of belt drive with positive action of gearing. The book goes into the construction of the roller bearing joint, chain, and sprockets. Suggestions are offered as to the designs that are applied based on good practice. A table is given that explains pinion bores, standard keyways, and guide groove data. There is also a formula to determine the length of a chain to be used on a practical drive.

Sipp-Eastwood Products

Sipp-Eastwood Corporation, Paterson, N. J., have issued a catalog descriptive of their products that handle silk, rayon, acetate, and fine cotton yarns. The publication is illustrated and describes the high-speed over-end creels, high-speed warpers, high-speed direct beam warpers, rachel warpers, tensometers, densimeters, warp tension indicators, quiller tensions, coner tensions and static eliminators. Several installation views show the company's products in operation. A comparative rayon yarn table showing yarn size in deniers, yards per pound, yards per ounce and tram-silk equivalent, ends per gross, weight in grains of a skein, spun silk and single cotton equivalent, and worsted equivalent is included.

New Jenkins Valves for Copper Piping

Jenkins Brothers, 80 White Street, New York City, have introduced a complete line of Jenkins' "Solder-End"

Valve for copper line

valves for 150 pounds service on copper lines. The plain end and the Mueller "Streamline" end valves are available at the same price. With the exception of the ends, the new valves are said to be identical with the standard Jenkins valves used for threaded installations.

Goodrich Vibro-Insulators

The B. F. Goodrich Company, Akron, O., has announced a new standard line of vibration damping rubber-to-metal mountings, known as Vibro-Insulators, which are designed for bases of machines, electric and combustion motors, generators, vibrating screens, and reciprocating mechanisms. The mountings are of the shear type and consist of an age-resisting rubber bonded to two metal plates, one of which is fastened to the vibrating member and the

PRESS ROOM, FORT ORANGE PAPER CO., CASTLETON ON HUDSON, N. Y. • FINISHED WITH SAVE-LITE

Millions of cartons a day to package your favorite food and drug items, and Save-Lite White Paint assures Better-Light, Better Product, Faster Production, Fewer Rejects, Better Morale, Lower Maintenance.

Save-Lite is *the* Plant Conditioning Paint, having extreme whiteness, good spreading and opacity, proper drying, dirt-resistance, washability, easy application and exceptional durability.

SHERWIN-WILLIAMS SAVE-LITE

THE PLANT CONDITIONING PAINT

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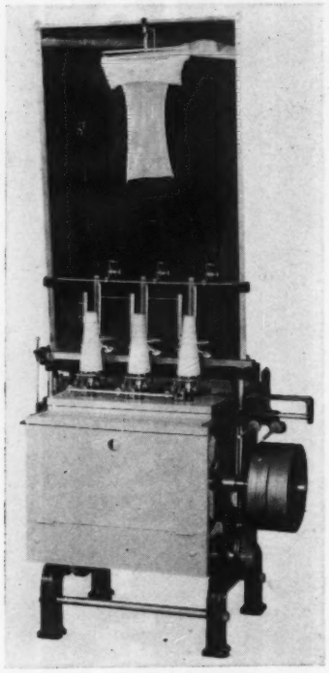
THE SHERWIN-WILLIAMS COMPANY, CLEVELAND, OHIO, AND ALL PRINCIPAL CITIES

other to the support or foundation. The Vibro-Insulators may be had in three types: the first has a maximum load capacity of 800 pounds and a minimum frequency of 800 vibrations per minute. The second has a minimum frequency of 1200 vibrations per minute and will support a load of 200 pounds. The third, which is the double shear type, has a minimum frequency of 1000 vibrations per minute and is available in a range of sizes for loads of from 50 to 3000 pounds.

New Winder for Three-Carrier Full-Fashioned Press-Off Recovery

Fidelity Machine Company, 3908 Frankford Ave., Philadelphia, Pa., have developed a new re-winding machine known as the Fidelity-Altemus Unit, which is designed specifically for re-winding three-carrier full-fashioned press-offs. The invention involves the operation of three spindles jointly con-



Winder for "ringless" press-offs

trolled so that one of the three-carrier yarns is winding simultaneously with the other two. In other words, the silk from the stocking is recovered on the winder cones in a manner similar to that in which the stocking was knit. It is said that mills have found it practical to use the package, without further processing, directly on the knitting machines for tops, heels, and toes. The company states that the Altemus winders already in place in the mills can be re-built to do this work, the best results being obtained with the automatic-builder type of machine since there is no contact with the silk while winding.

Booklet by Acme Steel

Acme Steel Company, 2840 Archer Ave., Chicago, Ill., has prepared a booklet entitled *My Strap-Book* by Doc. Steelstrap. This 16-page illustrated brochure keeps the manufacturer abreast of the rapid advancement in methods of packing and shipping. Included in the *Strap-Book* are testimonials from companies that have used the Acme product. The illustrations show various application of steel straps to the shipper's problem.

American MonoRail Booklets Describe Products

The American MonoRail Company, 13107 Athens Ave., Cleveland, O., have issued two new pieces of literature describing their products. The first explains the monotractor. It is a 24-page booklet illustrating electric drives for cranes, hoists, and carriers on the MonoRail conveying systems. It also outlines some of the control features that make possible complete and semi-automatic transportation of heavy loads from process to process, building to building, etc.

The second piece of literature is descriptive of the automatic cleaner for operation on the MonoRail track circuit over spinning, warping, winding, twisting, etc. It is said that this cleaner incorporates a new scientifically designed blower that produces a whirling column of air directed and controlled so that it prevents accumulation of fly with no harm to roving.

"Handbook of Colorimetry"

The staff of the Massachusetts Institute of Technology Color Measurement Laboratory, under the direction of Professor A. C. Hardy, department of physics, has collected information and made a study of color, the results of which are contained in the "Handbook of Colorimetry." It is explained that colorimetry is a relatively new science. Until physical instruments were developed which measure color in terms of quantities and wavelengths of light, the only available methods of color specification had to be based on samples of the various colors. The fact that these samples are subject to change with time, even under the best of conditions, has made it impossible to accumulate an extensive and accurate body of knowledge concerning the diverse phenomena of color and color vision.

This handbook not only surveys the entire subject of colorimetry for the benefit of those who are approaching the subject for the first time, but also discusses the characteristics of light sources, the physical measurements of colored materials, and the laws of color mixture. Many illustrated charts are included and there is a graphical representation of colorimetric data. The book may be had for $5.00 either from The Technology Press of the Massachusetts Institute of Technology or through COTTON'S book department.

Folder by Brown Instrument

The Brown Instrument Company, a division of Minneapolis-Honeywell Regular Company, Philadelphia, Pa., has issued a folder illustrating and describing the features of Brown Air Operated Controllers that were recently introduced by the company. The title of the folder is "Coordination" and the theme of it is simplicity. It explains that the Brown Air-o-Line has no complicated tubing, levers or swivel type air connections. It is said that the instrument can make pressure changes as small as 0.01 pound per square inch or ¼-inch water pressure at the control valve. All of the exposed operating members are of stainless steel. Other features include interchangeable control systems, direct and reverse controller action, sealed control unit, stationary nozzle mounting, positive pen movement, balanced pilot valve, manual control screw, universal mounting, and electric or hand-wound clock.

Booklet on Centrifugal Pumps

Allis-Chalmers Manufacturing Company, Milwaukee, Wis., has issued leaflet No. 2224 presenting the facts about their single suction end inlet centrifugal pumps. The pumps are mounted on substantial pedestals and are used with direct connected or with Texrope V-belt drives. The pumps are bronze fitted and range in size from 1¼ inches x 1¼ inches to 5 inches x 4 inches for heads up to 100 feet and over, with many applications in most of the industries. In addition to showing the general construction with dimension tables, this leaflet shows a number of typical combination drives. This type of pump can be furnished suitable for use in an inclined or vertical, as well as a horizontal position.

Bristol Pyrometer

The Bristol Company, Waterbury, Conn., has prepared a large illustrated folder announcing their new wide-strip pyrometer. It is claimed that the pyrometer, which operates on the potentiometer principle, has a built-in accuracy that commands attention, and which is made possible through the use of a simple measuring, balancing, and recording mechanism. The pen movement is always proportional to the galvanometer deflection which accounts for the quickness with which the balance is restored and temperature changes are written on the chart.

WITHIN EASY REACH OF TEXTILE-MILL MEN

1. *Maximum Protection.* This new G-E shipper-rod-operated station provides instantaneous protection against undervoltage when used with a magnetic switch having a holding interlock. Motors cannot restart after power failure until the shipper rod is moved to the "OFF" position and then returned to "ON."

2. *Positive Operation.* It assures closing of the motor circuit regardless of how rapidly the shipper rod is shifted; by preventing fumbling during starting, this feature protects your equipment and reduces maintenance expense.

3. *Compactness and Flexibility.* The small size of the switch, together with micrometer adjustment of the shipper-rod lever, makes it easy to install wherever most convenient.

These outstanding features mean better protection, more accurate control, and better adaptability for your job. And for situations where power interruptions are frequent, the new shipper-rod- or button-operated stations, providing time-delay undervoltage protection, give the added advantage of a 1- to 4-second time delay before shutdown of the machine due to undervoltage. This reduces machine shutdowns.

Why not let us tell you more about these new devices for textile plants, and show you how you can profit by their use? Get in touch with the nearest G-E office, or address General Electric, Schenectady, N. Y.

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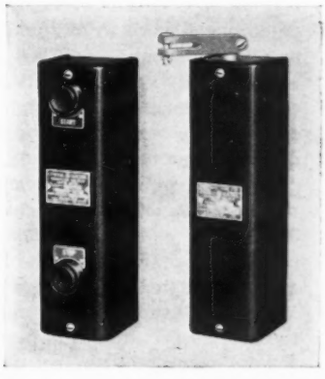
General Electric makes it easy for you to get the most for your control dollar — first, by offering you control designed and constructed for excellent performance and, second, by the convenience of G-E service. It will pay you in time saved and in better control performance to rely on General Electric textile-mill control and textile-mill service.



CR2940 time-delay stations — (left) button-operated; (right) shipper-rod-operated

080-77

GENERAL ELECTRIC

TIMELY NEWS ITEMS WITH A TEXTILE SLANT . . . .

Gillespie Joins Flexible Steel

James W. Gillespie, Omaha, Neb., formerly with the U. S. Rubber Company, has taken over the Texas, Louisiana, Arkansas, and Oklahoma territory of Flexible Steel Lacing Company, Philadelphia, Pa., made vacant by the death of W. Ernest Oldfield. Mr. Gillespie will carry the complete line of Flexible Steel products. He is making his home at 724 Parkmont St., Dallas, Tex.

Mr. Gillespie

Textile Banking Company Factors for Farr Alpaca

Textile Banking Company, 55 Madison Ave., New York City, has entered into a contract with Farr Alpaca Company, Holyoke, Mass., for the factoring of all sales made through the newly-created general sales office of Farr Alpaca Company that is located at 469 Seventh Ave., New York City.

Program for Research in Textile Drying

An outline program for the research on textile drying, which the U. S. Institute for Textile Research is engaged in financing, is published in the July issue of that organization's magazine, *Textile Research*. "The ultimate goal for this work," it states, "is to provide sufficient information so that any kind of textile material can be dried with maximum speed and economy, but with minimum damage to the quality of the product." A fund of $5,000 is needed for this study and subscriptions of $100 each are sought; this sum qualifies co-operators to receive confidential progress reports of the study, and also gives them contributing membership in the Institute at no extra charge. Only 30 per cent of the fund has been subscribed thus far, though the 150 textile men who attended the conference in May on this subject voted unanimously to have U. S. Institute to undertake the financing and conduct of the project. Other noteworthy features of the July *Textile Research* are: the report of a study of "The Retentivity of Water by Purified Cellulose" by Homer A. Hamm and W. A. Patrick, and a summary of a basic research on the properties of starches, reprinted from the *Journal of the Textile Institute* (England). The latter study was conducted at the Shirley Institute of the British Cotton Industry Research Association by Richardson, Higginbotham, and Farrow, and is entitled "The Reducing Power and Average Molecular Chain-Length of Starch and Its Hydrolysis Products, and the Constitution of Their Aqueous Pastes."

Booth Joins Emmons

Herbert Booth, Claridge Manor Apartments, Birmingham, Ala., has joined the southern sales force of the Emmons Loom Harness Company, Lawrence, Mass. Mr. Booth will cover the states of Alabama, Georgia, Louisiana, Mississippi, and Oklahoma. He will handle the complete Emmons line.

Jones Represents Atlanta Harness & Reed Company

David C. Jones, who recently has been with Industrial Products, Inc., Greenville, S. C., has been made representative in the Carolinas and Virginia territory of the Atlanta Harness & Reed Manufacturing Company, Atlanta, Ga. Mr. Jones will specialize in design and weaving problems.

Textile Organization Study

The Wharton School of the University of Pennsylvania has been appointed as the research agency to conduct the study of production and distribution organization in the textile industry, the financing of which was recently authorized by The Textile Foundation. The investigation will be carried on under the advisory supervision of the committee on economic research of the U. S. Institute for Textile Research and an auxiliary committee composed of presidents of several of the major textile associations. Joseph H. Willits, dean of the Wharton School, will be in charge of the study and will be assisted by other members of the industrial research department of the school. The study will involve investigation into the factors affecting the success or failure of various types of organization which have undertaken, at any important point, to bridge the gap between the mill and the consumer. Its purpose is to serve as a guide to individual manufacturers in their own determination of future policies. Factors influencing periodical variation in production will also be considered as a part of this study.

Brennan Vice-President of Brooks Oil Company

L. W. Brennan, Jr., who has been associated with the Brooks Oil Company for 24 years, has been made vice-president and general sales manager of the boiler treatment division of the Brooks Oil Company, 3304 E. 87th St., Cleveland, O. Mr. Brennan, who is well known among engineers and industrialists, will direct both the foreign and domestic sales of this division for the company.

"Industrial News"

The July issue of "Industrial News", organ of The Gates Rubber Company, 999 So. Broadway, Denver, Col., describes and illustrates the installation of two 30-ton machines installed in a space 10 x 18 feet where formerly the space occupied by the units was 30 x 60 feet. This space was saved, it is explained, by the installation of Gates Vulco Ropes. An interesting illustration included in the organ is a unique drive between vertical shafts, showing a water turbine shaft running at 87 r.p.m. driving a dynamo running 700 r.p.m.

Patents Issued

According to Paul B. Eaton, patent attorney, Charlotte, N. C., several patents have been recently issued for textile applications. T. K. Rea, Charlotte, N. C., secured a patent on a loom picker which is characterized by the picker having a metallic casing with two vertical holes, one for the picker stick and the other for a leather filler, with the front end of the casing having a hole for the nose of the shuttle to engage the filler. J. F. Schenck, Jr., and R. W. Patterson, Shelby, N. C., were awarded a patent on a machine for applying ribber tickets to pairs of stockings. Other patents were granted to J. D. W. Hubbeling, Enka, N. C., for the manufacture of artificial silk; George W. Allred, Mayodan, N. C., for a cleaning device for circular knitting machines; and L. W. Joyce, Greensboro, N. C., for an assembling machine for stitching fabric edges.

A patent on a mechanism for the take-up motion on knitting machines has been issued to Paul G. Stroud, assignor to Belmont Hosiery Company, Belmont, N. H. One of the claims reads: "In a knitting machine, the combination with instrumentalities for automatically knitting a fabric and making a looper course in it, and means for maintaining a tension on the fabric during said knitting operation, of

mechanism for automatically increasing the tension on the fabric temporarily substantially simultaneously with the knitting of the looper course."

H. V. Lang, Charlotte, N. C., was awarded a patent for applying a treating fluid to yarn packages. Hearne Swink, Salisbury, N. C., and P. W. Douglas, Ridgewood, N. J., were issued a patent for a re-enforced hemstitching method.

Conveyor Chain Book by Link-Belt

Link-Belt Company, 519 N. Holmes Ave., Indianapolis, Ind., has completed a 16-page illustrated booklet, No. 1552, covering its line of "RC" Silverlink conveyor chains operating over cut-tooth sprocket wheels. These chains are said to be a further development of the company's Silverlink finished-steel roller drive chains. For conveyor work they are furnished in extended pitch and with standard-diameter rollers as used on drive chain work, or with larger rollers to permit the chain to roll along instead of sliding on the edges of the side bars. The smooth operation of this accurately-made chain is said to fit it exceptionally well for use with continuous automatic processing machinery. The catalog gives complete dimensions, weights, ultimate strengths, and list prices. Booklet No. 1557 is also available describing the cut-tooth sprocket wheels that are used with these chains.

Pyrotrol Bulletin

The Bristol Company, Waterbury, Conn., have published bulletin No. 457 which describes in detail the new Pyrotrol that was recently announced. In this bulletin there is information included regarding the application of the new Factory-Mutual-Approved instrument which is offered as a safety device for use on gas-fired industrial ovens—a safety against pilot light failure.

New Departure Honors Older Employees

The New Departure Manufacturing Company, Bristol, Conn., a division of the General Motors Corporation, was host to 252 of the older employees at a dinner the early part of July. The occasion was given over to an evening of singing and sociability. General Manager Hughes spoke on the subject of "6,000 years of New Departure experience" bringing out the point that the aggregate number of years of service of those present denoted 6,000 years of service with the company. Included in the list of women present were six who had experience with the company ranging from 20 to 43 years.

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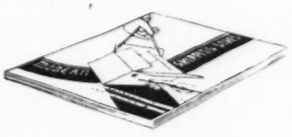

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PERSONAL NOTES
about Men You Know

W. E. RAMBOW, formerly overseer of carding at The Sibley Mfg. Co., Augusta, Ga., has been made superintendent of the Enterprise Mfg. Co., Augusta, succeeding C. C. PAGE, resigned. As reported, C. J. ASHMORE, formerly at Rushton Cotton Mills, Griffin, Ga., is now superintendent at Sibley.

ROSCOE O. ROBERTS has become superintendent of yarn manufacture at the Lincoln Mills of Alabama, Huntsville, Ala., which have resumed operation. It is understood that CHARLES K. DILLINGHAM, who had been superintendent of the plant, will be superintendent of weaving and finishing.

A. B. Moss, JR., has become connected with the Charlotte (N. C.) office of Whitin Machine Works, in connection with sales-and-survey work. Mr. Moss has been assistant agent of the Merrimack Manufacturing Co., Huntsville, Ala., and assistant manager of the Bemis Bro. Bag Co., Talladega, Ala.

R. A. DALLUGGE has been made general manager of the National Textile Mills, Monrovia, Cal., which were organized to operate the plant of the Monrovia (Cal.) Cotton Mills, which have been idle for several years. LOUIE M. SAXON is assistant manager of this plant and superintendent of the Argonaut Cotton Mills, Inc., Los Angeles, Cal. J. D. LONG is superintendent of the National Textile Mills' Monrovia plant.

R. A. BUTLER has been appointed head of the industrial engineering department, on the staff of LUTHER H. HODGES, production manager, of the mills of Marshall Field & Company, and will have charge of industrial engineering of all mills including those located at Spray, N. C. G. LAWSON IVIE, who has been connected with the plants of the Carolina Cotton and Woolen Mills, at Spray, was promoted to merchandise manager in charge of the entire domestic line of products of Marshall Field and Company, and will have his offices at 200 Madison Ave., New York City. C. E. MOULTON, formerly merchandise manager of sheets and pillow cases, will be assistant to Mr. Ivie. C. P. WALL has been made assistant production manager in charge of the Bedspread Mill, Draper Blanket Mill, American Warehouse, Draper Sheeting Mill, Nantucket Sheeting Mill, and the Spray Bleachery. J. M. NORMAN, JR., is assistant production manager in charge of Karastan Rug Mill, Spray Woolen Mill, and Rhode Island and Lily Silk Mill. J. F. WILSON is assistant production manager in charge of the Fieldale Towel Mill, Fieldale Hosiery Mill, and the Athena and Puritan plants which include the underwear and towel activities in the Carolina group. G. C. TRUSLOW, who has been acting as director of quality control, has been made general superintendent of the Carolina group of mills. L. N. HALE, who has been superintendent of Rhode Island and Spray Woolen Mills, has been made director of quality control and fabric development. JOHN GEER, formerly with the Kendall Mills, Paw Creek, N. C., is assistant to W. G. MCCOLLUM, director of purchases for raw materials and supplies. BENTZ HOWARD, formerly with the Riverside and Dan River Cotton Mills, Danville, Va., is in charge of local designing and drafting for the entire group of mills, succeeding H. P. MANSFIELD, who has been transferred to the bureau of style and design in New York City.

W. W. RAWLINSON, who has been agent of the Suffolk Mills of the Nashua Manufacturing Company, Lowell, Mass., has been given charge of the blanket division of the Pepperell Manufacturing Company, Biddeford, Me., succeeding JOHN HYLAN. JAMES R. MILLIKEN is assistant superintendent of the Nashua Manufacturing Company.

MAX YANKAUER has been elected president of Mill Factors Corporation to succeed the late JULIUS G. KUGELMAN.

J. L. HENNISS, who has been in charge of knitting at the Magnet Mills. Clinton, Tenn., is now in charge of manufacturing operations, succeeding R. H. GADDY, superintendent, who is now manager of the Baker-Moise Hosiery Mills, Dallas, Tex.

M. A. BEARDEN has been elected active vice-president and general manager of the Pomona Manufacturing Company, Greensboro, N. C., to succeed F. GORDON COBB, who resigned after more than a year's successful service. W. L. CLEMENT, JR., is assistant manager and general superintendent; R. A. WHATLEY is plant superintendent; G. W. DOBBINS is assistant superintendent; and JOHN L. SCOTT is purchasing agent and manager of yarn sales.

WALTER T. JENKINS has been made assistant plant manager of the Rock Hill (S. C.) Printing & Finishing Company. Mr. Jenkins formerly was plant engineer and this post is now filled by J. A. AYCOCK.

O. E. BISHOP, formerly overseer weaving in the Springstein plant, Springs Cotton Mills, Chester, S. C., is now holding the same position in the Gayle plant of this company, also located at Chester, S. C.

J. O. KING, formerly overseer weaving at the Werthan Bag Company, Nashville, Tenn., has been given the same position at the John P. King Manufacturing Company, Augusta, Ga.

J. H. JOLLY has been promoted to overseer of spinning, spooling, and finishing at the Bibb Manufacturing Company, Macon, Ga. JOE PITTMAN has been made overseer of knitting of No. 2 mill, and WILLIAM C. CALHOUN has been made shift foreman at this plant.

S. A. MCCASH has been made overseer carding at the Eagle & Phenix Mills, Columbus, Ga., succeeding VIRGIL E. MCDOWELL, resigned.

W. H. SPENCER, JR., textile graduate of Clemson College in the class of 1933, who formerly was connected with the Springs Cotton Mills, Lancaster, S. C., has been made second hand of weaving at the Watts Mills, Laurens, S. C.

Obituary

JOHN DODSON TAYLOR, Summerville, Ga., organizer and president of the Summerville (Ga.) Cotton Mills, passed away the early part of July and funeral services were held July 3.

TROY SHERRILL, who was injured in an automobile accident June 17, succumbed to his injuries June 18. Mr. Sherrill was superintendent of the Cannon Mill Plant, Rockwell, N. C.

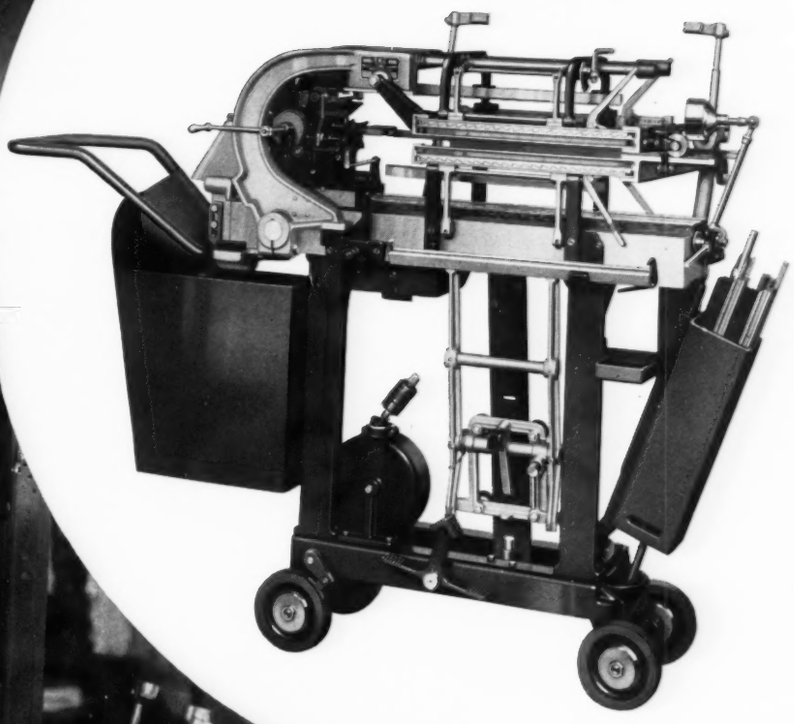
C. A. WARD, treasurer of the Brooks Oil Company, Cleveland, O., passed away June 29. Mr. Ward had been with the Brooks Oil Company for 35 years.

CHRISTIAN PAULSEN BERG, Chicago, Ill., a member of the engineering staff of Link-Belt Company, passed away July 4.

PORTABLE *Rayon and Silk*

warp tying machine

FOR USE IN LOOM ALLEYS



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The SONOCO Cone for winding silk or rayon. The Satin Finish Velvet Surface . . . an added SONOCO refinement, represents the latest development in paper carriers for finest count yarns.

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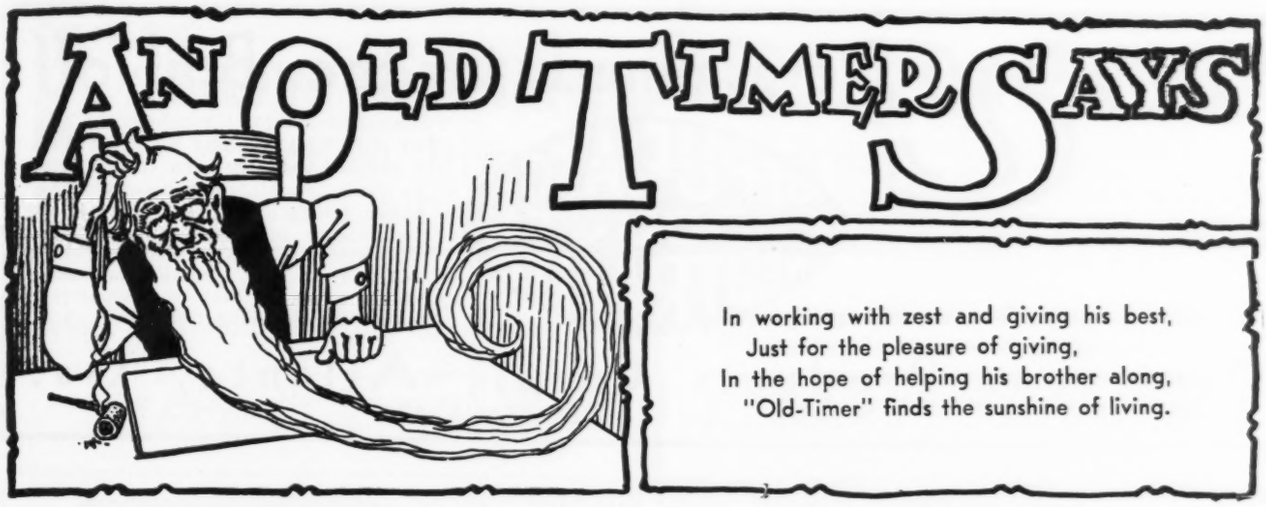
The SONOCO Cones are the result of 37 years of development in the direction of specialization—the perfect cone for the purpose . . . the best cone for the specific job. More than 90% of all orders for SONOCO cones are special orders on specifications recommended by our own technical staff.


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

What Do You Know about Your Village?

I DO NOT believe that the average superintendent makes enough of a detailed study of his village. To partially explain this statement, I believe a census of your village will show that there are possibly 65 per cent of the families that have been with you from three to five years or longer, so that your so-called turn-over is among not more than 35 per cent of the families in your village.

If that is a fact, then it would be worth $500.00 to your firm for every family that you could get out of the 35 per cent class into the 65 per cent class.

This statement may seem somewhat like an exaggeration, but if I had the time and space I am quite sure that I could prove my contention. Every overseer and superintendent knows how expensive it is to change a weaver on a set of looms; a card hand on a set of cards; a doffer in the spinning room, or any other operative in the mill. However, there are very few superintendents and overseers who actually know what these changes amount to in dollars and cents.

To make a rather radical illustration, what do you suppose would happen to your weave room if all of the weavers were in a class with ten of the best weavers that you could pick out who had been in your employ three years or more?

Yes, I can hear you say that anyone would know that the production would increase, end breakage would decrease, the liability of having a number of weavers out on Monday morning or any other morning would be eliminated, the loom fixers would have less work to do and therefore could take more looms—and all of the other items which are so simple that it is not necessary to mention.

Then to get back to my original statement, do you believe that the average superintendent gives enough study to his village?

I am quite sure that it would be worth your while to have a census made of your village, designating just how long each family has been in your employ. Then compile a report showing the percentage of families which have been with you over one year, over three years and over five years. Even if you do not learn some things from this report that you were not expecting, I firmly believe that it will be worth what it costs for the information it will give you.

To bear out my contention that the average superintendent does not know enough about his village or the families of his village, I should say, I will relate a little incident that occurred at one of the Southern Textile Association meetings held at Blowing Rock, N. C., several years ago.

A man who was reading a paper at that meeting made the statement that the labor turn-over in the average cotton mill was over 100 per cent. This statement was challenged by one of the members with the result that it was revealed that the speaker got his information from payrolls which showed, of course, the number of people who went to work each week, and that was the way he estimated the turn-over. The man who challenged the statement happened to have a seven-year record of a village of approximately 3000 people that showed the actual turn-over occurred in only 35 per cent of the total inhabitants, that is, the people who did the moving were less than 35 per cent of the families in the village.

Every superintendent and every overseer knows or can easily ascertain if he will study his village record or his payroll that there are a certain class of operators which might be called transients. They stay only a few months at any mill. Sometimes one weaver, spinner, or fly frame hand will be at the same mill three different times in a year.

All of this is said in the hope of driving home only one thought and that is the great importance of getting a family out of the 35 per cent into the 65 per cent class as explained.

Axiom: The best citizens, the best families that have the best houses to live in—the families whom the merchants are not afraid to credit—are the families that have been at one mill for several years.

◆◆

Egotism is the word applied to the man that believes the mill will not run without him. It has been said that when a man gets so good the company cannot operate without him, it will secure the services of someone else to take his place.

Profits are Determined in the Boil-off

It doesn't make any difference how high the quality of weaving, the market value of grey goods can be greatly impaired or even totally destroyed in the boil-off. Your profits are in direct proportion to the expert care and attention given in the boil-off.

Real Quality—APPEARANCE AND DURABILITY—demands a stable and controlled solution throughout the boil-off. DEPURATOR and NEUTRALITE Products guarantee such control with an absolute minimum of dependence on human thought and attention. These perfected products are "fool-proof" and will help you to lower production costs and realize more profits from more salable products. May we demonstrate without cost or obligation?

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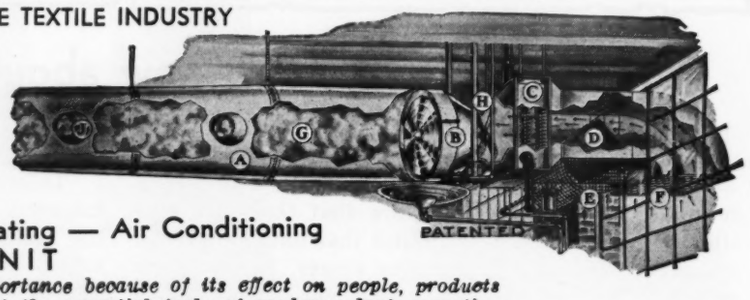

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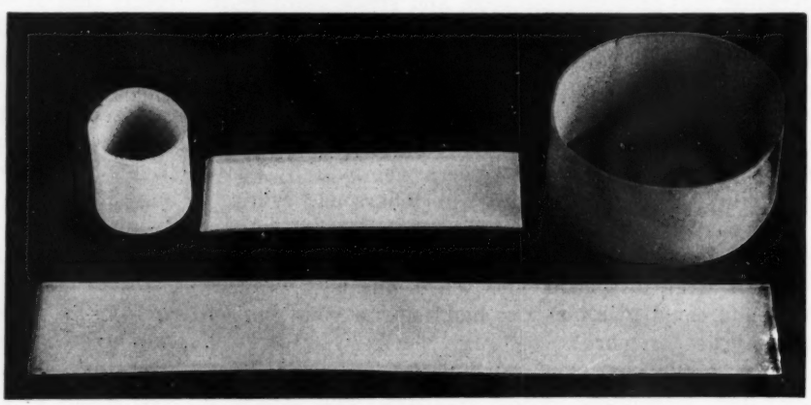

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HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all Varieties of Mill Subjects

More on Training Help in the Weave Shed

Here is an interesting viewpoint coming from a man in New England.—Now that we have help, what are we going to do with them? . . . . .

EDITOR COTTON:

In answer to "CONTRIBUTOR NO. 6435" who asks about the training of loom fixers and weavers, I shall make the following comments from our standpoint up here in New England.

During the past seven years the problem of training new inexperienced workers for the weave room has not been one of the "headaches" of the weaving overseer or his assistants. To be sure, they have had plenty to think about in these labor specialization programs, leading to the multiple loom system, but the installation of these plans resulted in a surplus of help that were skilled in the tasks of the weave room. This proved to be a reservoir for future needs, and to be strictly fair in re-hiring displaced help first, and wise in choosing a trained worker over one that was inexperienced, we have constantly drawn upon this supply until it has just about dried up as "CONTRIBUTOR NO. 6435" has discovered.

This contributor wants to know what we are going to do about it. I suggest that he dig down to the old well of unused gray matter and draw out all those ideas about youth training so that he can put the young inexperienced people to work. Give youth the break that it has longed and hoped for, and which is certainly overdue. Being a weaving overseer, I will tell him what I think should be done. This information will be the result of what I have done, what I am doing now, and what I would do if the conditions were like some I know.

First of all, make a preliminary analysis of this employee training as it affects the weave room. No one would consider building a bridge without knowing beforehand the nature of the ground on which the towers are to be erected, and without detailed data as to all its structural features. In like manner, before undertaking the work of employee training, it is essential to analyze the problem from all sides and to plan as carefully as possible the procedure to be followed in carrying out the work. A chart of all the jobs that come under the weave room overseer is necessary. Then will be compiled a complete specification of each job. This will give a summary of duties, a description of the work to be performed, type of looms the operative will work on, the material to be handled, and the tools the employee will need. Then will come the necessary qualifications as to education, previous experience, and physical requirements. Also, there can be added the objective, or what the worker has to aim at, and to what job he may be promoted. By this I mean, a battery hand can have the objective of putting in 455 bobbins of 40s cotton filling per hour and keep this up for 8 hours and still have a bit of time to learn to weave.

The next task is to arrange, or re-arrange if necessary, all the jobs in the weave room so that a young man entering the department may start at the bottom and progress from job to job even to the highest paid position if it should become vacant. The possibility of promotion is a great incentive, so provide paths of promotion through the weave room and further if advancement is possible. Cut out, or cut down all "blind alley" jobs as far as possible, and be frank in telling an applicant if he is employed on such a job. This re-arrangement of jobs should not increase the cost of a department and many times the cost will be lowered. With this new set-up, labor turnover will drop to almost nothing, and the morale, technique and efficiency will be increased.

Let the set-up be something like this. A boy is hired in as a filling boy, from here he goes to a chain boy or battery hand, then to weaving, and if a good weaver, to warp man or changer fixer and loom fixer and so on to the executive positions. Or, a girl is hired in as a battery hand and goes to drop wire girl. From here she goes to weaving, loom girl or smash fixer. As weavers become too old to carry on, the men go to loom cleaning or bobbin cleaning, and the women to drawing-in departments.

Now, Mr. Overseer, we know whom we want, how to get them, and where to get them. All this is very simple, *but what to do with them after we get them is quite a different thing.* In large mills where there is an educational department with an educational program under the direction of a person experienced in industrial education, there is not much to worry about, but in most mills the weave room training falls on the overseer, second hand or third hand. I prefer that the responsibility and necessary authority for this job should fall on the second hand. In hiring this man or choosing this person from the

WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

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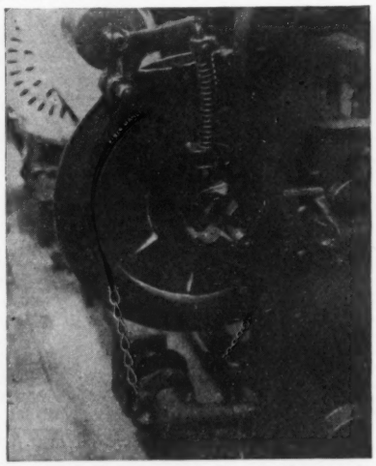

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loom fixers we must have that thought in mind, for the very essence of this job is teaching. Even though the mill has an educational director the responsibility for all new help as they enter the weave room should fall on his shoulders. This man who supervises others must constantly be on hand to demonstrate new methods and correct the mistakes of his subordinates, new or old. The right kind of man on this job is worth his weight in gold, and don't forget it. One might ask, "In your opinion, what type of man is the best?" I will say that he should follow consciously or unconsciously these words of Kipling:

I keep six honest serving men,
(They taught me all I knew),
Their names are What and Why and When,
And How and Where and Who.

He must know the history and policy of the company. He must have a general knowledge of textile manufacturing, and be thorough in his knowledge of looms and the process of weaving. He must know every part of the loom and be able to explain its function. He knows the best way to do everything there is to do in a weave room, and he can do what all pupils like—he can demonstrate and prove that he knows how to do it. His moral character will be beyond question. He must be familiar with the state labor laws and have a general knowledge of national laws pertaining to workers under his care. Some traits of this best second hand stand out distinctly in the memories of the young persons who worked under them. Here are a few, "He always was cheerful and encouraging", "He always wore a smile and his demonstrations were very complete", "He was always fair and patient."

The Learners

Now we will take it for granted that we have a new employee that meets the requirements on the specification sheet, and the teacher is ready to go to work. As I said previously, if the mill has a school where this new worker has had an intensive and closely supervised schedule of training, the job to be taken over by the second hand is simplified. However, there is one very important thing, the most efficient coordination between the weave room and school must exist. Not the slightest difference of opinion in the methods of training should be debated at any time in the presence of the new operator.

The weave room is not the best place for practice but in the majority of mills it is the only place. Whatever method is used, try not to interfere with normal production. It is not difficult to teach a person who has a desire for achievement, and this requirement was on the job specification sheet when the call went out for a new battery hand. When we get the newcomer, let us say it is a girl, we let her stand and watch an experienced battery hand for about an hour. Be sure she does nothing but watch, so that she may see the operation in general. Then take her over to a couple of old batteries that are set up on a stand. Show her what drives the bobbins out of the battery and why she must keep them filled. Then carefully demonstrate in sequence what is required of her, like this:

1. Wind all hanging yarn around a thread holder.
2. Pick up a full bobbin out of the box.
3. Break off any tails that may be hanging from the butt of the bobbin.
4. Unwind about two feet from the top of the bobbin.
5. Place the butt of the bobbin in the socket of the battery disk, press the nose into the small end of disk.
6. Draw the loose end over the proper notch of the thread guide and wind around the thread holder.

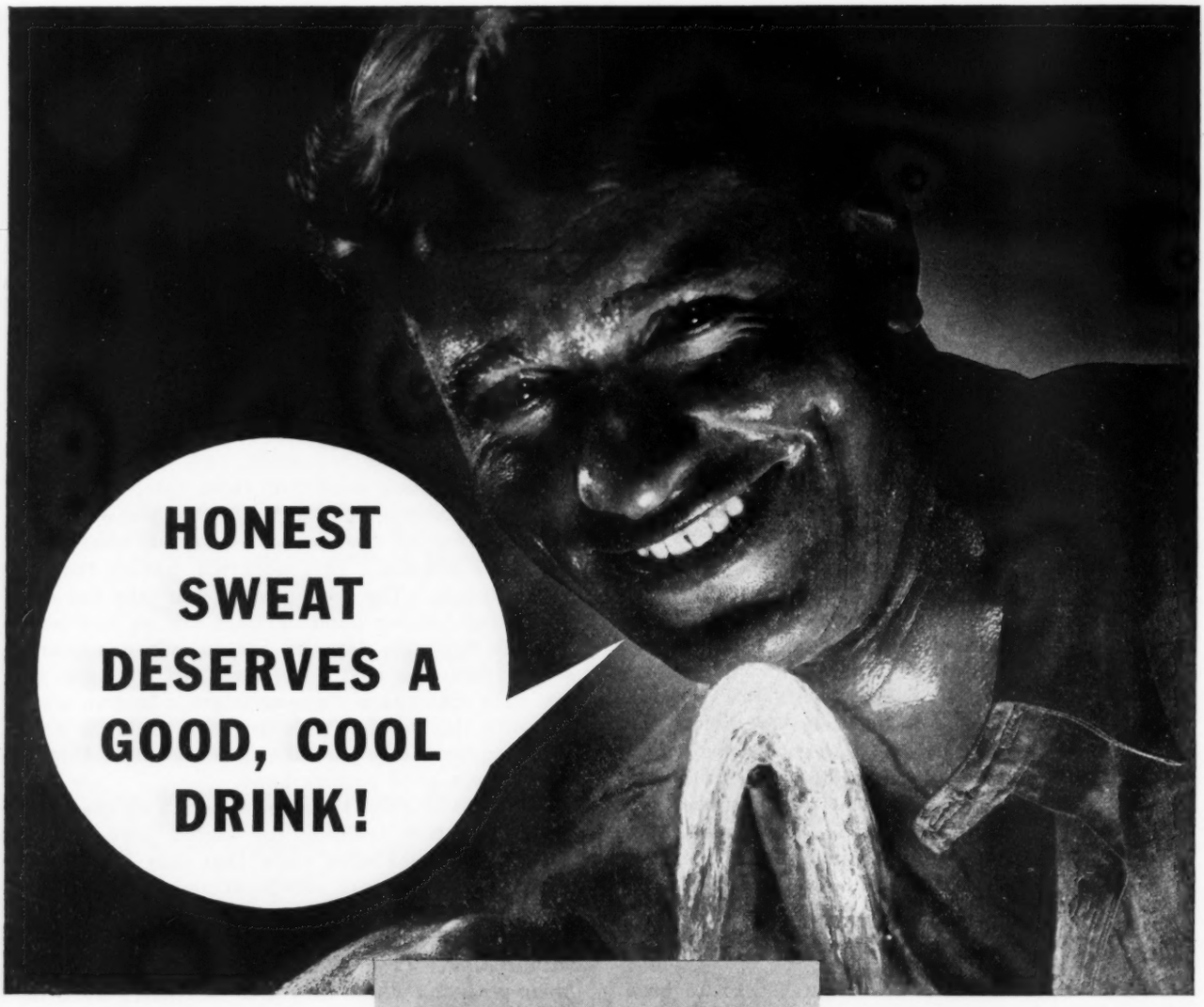
Be sure to show her how and when to operate the feed and hold back pawls of the battery.

If filling feelers are used, show her how and when to remove the loose yarn from the cutters and thread clamps.

Leave this new worker on these batteries for one day, filling them up and taking the bobbins out again, but make her sit down about every half hour for at least five minutes. This work will harden the skin of the hands. The next day we can take her back to the old battery hand or start her on new work. For the first two days let her do only one quarter of the task, the next four days half the task, and the next four days three-quarters. In two weeks give her the full job. As the same training would be given to a boy, we take it for granted that we now have a good battery hand.

Outside of this, the first real job of the weave room, all other training for higher jobs must be earned. Persons must show that they are good at their present job, are ambitious and willing to sacrifice some of their leisure time to improve. If they are not willing to give up some of their pleasure to attain higher ground, we might just as well leave them stranded where they are. A battery hand that wants to be a drop wire girl should be willing to practice at home on a small frame made by the second hand. A drop wire hand that wants to be a weaver should be ready to take home a bunch of yarn and learn to tie weaver's knots, also be willing to study a set of drawing-in drafts to learn how to draw-in yarn and examine a swatch book showing all the common weaving imperfections. These, of course, are to be provided by the second hand. A man weaver who wants to become a warp changer or a changer fixer must be willing to attend an evening textile school if there is one nearby. Any man with this ambition must help himself by subscribing to at least one textile paper. He can and should have a book like the one put out by COTTON on loom fixing by Ivar Moberg. He should train himself to be able to tell at a glance the different diameters of cap screws, bolts, nuts, and washers. He should study fibers and yarns so that he will know the why and wherefore of yarn numbers.

All of this may be done in addition to the training, assistance, and guidance being given by the second hand. The overseer should have a complete bibliography of books, periodicals, and papers covering the training for weave room work. He will be able to advise all changer fixers and loom fixers what kind of tools to buy in order to do the most



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efficient work. To all fixers there should be available for reference, a complete list of names and numbers of all parts of the looms they are keeping in repair. This will mean that they will all talk the same language when speaking about looms, and it will stop the use of "mongrel" bolts and screws.

In closing I wish to say one more thing. I mentioned before that the second hand should be of the highest moral character. If he is, he will keep the weave room that way. He will be strict and firm at all times. Many young girls are coming into our weave rooms these days and when they are dropping wires at the back of a warp or filling batteries in an alley, men and boys, and sometimes women as they pass by, are everready to give that unwelcome slap where the girls don't like it. If the second hand is the man I hope he is, he will have all people keep their hands where they belong, and if they don't he will warn the first time, reprimand the second time, and discharge the third. His reward for this will be the respect and undying gratitude of all those who come under his supervision and the confidence and appreciation of those for whom he works.

CONTRIBUTOR No. 6476

"J. R." Gives a Resume of Card Settings

EDITOR COTTON:

There has been from time to time a continuous stream of discussions and articles on the pages of "HOW OTHER MEN MANAGE" department of COTTON dealing with the subject of card settings and results. These articles have been interesting, and instructive for those interested in this branch of the preparation of cotton for manufacture.

It would be almost impossible for such a group of contributors to write so many articles and not agree with some of the others, and needless to say, I have agreed with all of them to some extent, and have disagreed with all of them to a limited degree. Too, in many cases the suggestions that some of them make are almost duplications to some of the others.

"CONTRIBUTOR No. 6181," in naming the plate that is over the cylinder plate, the "percentage plate" is justified in doing so, as one of the card manufacturers has this plate listed in the catalog under this name, and whether some want to be dissatisfied with this name is merely a matter of opinion, as it does to a great degree control the card strips that are taken from the work as it is being carded. And furthermore, if some contributors do not wish to set this plate to the flats, others may. Personally, in setting this plate, I remove two flats and set this plate to the cylinder at the top edge as well as the bottom edge that meets with the cylinder door.

Regarding breaking strength, this is a vital point in marketing a great majority of our cotton textile products, as this thing is growing more in the eyes of the people; even though the fact still remains that 15 per cent of the people or buyers buy 85 per cent of the textile products produced.

The panacea for deficiency in breaking strengths does not all come at one place, but rather over the entire routine of processing. The card has a lot to do with it and then tension on the remainder of the card room machinery, as well as roll settings and the amount of twist, draft and sundry other conditions.

Many times I have conducted experiments with different things to improve the running conditions of the work, the improvement of the breaking strength, cleanliness, etc., and in such I have drawn conclusions that some may think foolish, and still other conclusions have completely reversed or contradicted some of the ideas that I had previously held.

In these experiments I have for my own information kept copies of the different changes that have been made, and the results and will list herewith six different lay-outs of card settings, so that they may be a visible picture of the differences of opinions and conditions where they worked to great advantage toward the improvement of the work:—

	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
Cylinder to doffer	.007	.007	.007	.007	.007	.007
Licker-in to cylinder	.010	.007	.007	.012	.007	.010
Feed plate to licker-in	.010	.010	.010	.012	.015	.017
Flats—						
Back stands	.012	.010	.010	.011	.010	.009
Fourth stand	.010	.010	.010	.011	.010	.007
Middle stand	.010	.010	.010	.010	.010	.007
Second stand	.010	.009	.010	.010	.010	.007
Front	.010	.009	.010	.010	.010	.007
Knife plate (back)	.029	.022	.022	.027	.022	.029
Stripping or percentage plate	.034	.027	.027	.034	.029	.034
Draft plate	.029	.012	.022	.034	.029	.029
Screen—						
Front	3/16"	1/8"	3/16"	1/4"	1/4"	3/16"
Middle	.034	.034	.034	.034	.034	.034
Back	.029	.017	.022	.027	.017	.022
Mote Knives—						
Top	.010	.010	.010	.012	.010	.012
Bottom	.012	.010	.010	.015	.010	.012
Doffer comb	.017	.022	.017	.022	.017	.022
Flat stripper comb	.017	.017	.017	.017	.017	.017

The different staples and grades of cotton are instrumental in determining the settings that are to be used to get the results that are desired, even though this old saying to get the *best results*, and then not telling what the best results are, is nothing short of "parrot talk". Is it? I think so. The reason I say this is illustrated in the case of a slubber tender saying once that to make slubbers run good the knife plate on the card had to be set to .022 so that all the seeds that the picker left in the laps would be removed. This may be true, but isn't quite as reasonable as keeping the flats clean so that these seeds will not clog, or keeping the licker-in in good condition so that the mote knives will knock these out before the cotton gets to the flats. It seems to be that the reason for a lot of seeds clogging in the flats is that there is something of a hook left on the points of the flats due to excessively heavy grinding, and wire that is rusty. Flats need burnishing quite often to remove the dirt that collects at the base of the wire that will have a tendency to collect a lot of the moisture that is prevalent in the card room and will start rust. Even in the case

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of vacuum stripping systems it is necessary to brush strip the cards at intervals in order to remove foreign matter that the vacuum pump will not remove with the suction. On the present 8-hour shift, two-shift day, I think that brush stripping should be done at least once weekly. Some fight the vacuum stripper, but I think it is one thing that should be in every mill. Some fight it because the careless grinder will let the nozzles work loose and rub the cylinder and doffer clothing, thus facing same, but it is a great aid in cleanliness, and also men who do this stripping are not compelled to eat the proverbial "peck of dust" each week. Isn't that true?

I might give a little information relative to the list of settings that I have listed, and will give the type of goods produced, as well as the cotton used, and would like to see someone else discuss the advantage of these settings in their mind.

No. 1 is on sheetings, using 1 1/32-inch cotton for warp, and 7/8-inch for filling, and this is a good grade of sheeting too. These same settings were used for tire goods as well using 1 1/16-inch cotton, carding 9 pounds per hour.

No. 2 is totally on tire cord, using cotton ranging from 1 1/32-inch to 1 5/16-inch, and you will note the draft plate setting as .012, which looks like it is really close, but still we were excelling the required breaking strength by better than 10 per cent, and the card strips were only 4 per cent. Doffer speed 6.84 r.p.m., and 50-grain sliver.

No. 3 is also on tire goods, and is giving good results, and I am using these settings at the present time, and will go more into detail farther along in this discussion.

No. 4 is on 3/4-inch and 7/8-inch cotton, on knitting yarns and sewing twine. Doffer r.p.m., 12.5, 68-grain sliver, 16.5-ounce lap.

No. 5 on sheetings, bedspreads, and oil cloth base similar to prints, 7/8-inch and 15/16-inch cotton, 42-grain sliver, doffer r.p.m., 8.5.

No. 6, broadcloth, voiles (combed). 50-grain sliver, 5.5 r.p.m. of doffer, 1 3/16-inch cotton, spinning 47s and 70s.

Cards are like human beings to a great extent—you can't set every one alike and get the same results, no matter how hard you try. Reasoning says that they should function alike, but actual practice gives a different answer when actually tried. You may have one card that is giving the results that are desired, and then try setting 20 more in the same line, and then try actual tests of the sliver that is taken away from the card in cans, the fly waste, the card strips, the scavenger roll clearer waste, and you will see a great variation in the results obtained. Then, too, it will not be a surprise to a great number that there is a certain amount of waste that is called invisible, still some may say, that is foolish, still the following facts may be worthy of a little study:

	Lbs. Cotton	% Flat Strips	% Card Fly	% Cyl. Strips	Invisible Loss
Straight wire clothing..	538	2.97	1.48	.0004	5.00
Regular wire clothing ..	530	2.64	1.22	.56	4.05
Automatic Stripper	536	3.04	1.69	....	4.70

These facts are brief, yet they may cause you to try some of this work called experimenting. It is called a dear price to pay for things, yet a lot is gained many times that is well worth knowing.

The settings that I am using are those listed as *No. 3*, and here are some of the interesting things that might be worth thinking over. We are making 13.75s, 19.80s and 22.70s yarns, on long drafting spinning. The required breaks for these yarns are 138 pounds, 98 pounds, and 82 pounds respectively and we are giving them a break of 152 pounds, 110 pounds, and 93 pounds, respectively, though I do not claim that all these are coming from the card settings. We are using 1 1/16-inch cotton, Middling grade, making a 12-ounce lap, 46-grain card sliver, doffer, 7.25 r.p.m., 66-grain drawing sliver, 220 r.p.m. of front drawing roll, .43-hank slubber roving, 235 r.p.m. 1¼-inch front roll, .93-hank intermediate roving, and 1.90, and 2.60-hank speeder roving.

There Is No Set Rule

Some years ago an old carder was kind enough to me to say that there is no hard and fast rule to anything that is done to a card to make it do the work that you want it to do. There are a number of things that have to be changed, and then the remedy may be found and then worked out even better than some might expect. He also said that card settings should be made so that there would be a working surface between the points of the wire even after the cotton was in the clothing.

It might be well said that a sense of touch is a great factor in card settings. Several grinders have told me that I set the tightest of anyone they have ever followed. Well this "about" stuff is all poppycock anyway. A setting to a gauge is a setting and not guesswork. As it may be well said that setting the lip of a screen to .029 and then be able to put .034 into it and then have plenty of room is very poor setting. Flats are the places for hair rising, and utmost patience as turning the cylinder by hand before belting up to find any such things as rubbing ere the time that the cotton goes into them. It is a good idea to have a gauge that is .002 inch thicker than the settings to test the settings before starting up. This will give a man a bit of experience and confidence before letting loose on common touch when beginning to grind.

In my experience I have had considerable trouble in lessening card fly, and in the last analysis I found by experimenting that the licker-in screen and mote knives are great factors in this point in eliminating this evil. Some say to set the mote knives to the point, but I found it different in lessening the white cotton that went underneath the cards. By lowering the licker-in screen or rather dropping it to ½-inch from the points of the licker-in, and then setting the mote knives to the heel rather than the point was my best step in this trouble. The accompanying drawing will make this even clearer.

Mentioning the sensitivity of touch in this makes it even more interesting. Once while on a job at night a grinder had just started a card after grinding, and it was loading and very cloudy. I had the card

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stripped, and then put the gauges into the doffer-cylinder setting and found at one end the setting as .015 and the other .017. I set the doffer, and then started the card, good work followed, and the card grinder said it would face, but it didn't.

In another case, a shop fitter had a grinder setting flats for him, and was inspecting the settings, and came upon one card he thought was too close. He instructed the grinder to re-set the flats. The grinder gave him a nod of acceptance of the order and went for his tools. He didn't set the flats at all, but waited a few minutes and then asked the fitter to again feel the gauges, he did, and the following conversation followed:

"Ben, you are like a lot of other fellows, when you do something and someone checks up on you, you get excited and go to the extremes," said the fitter.

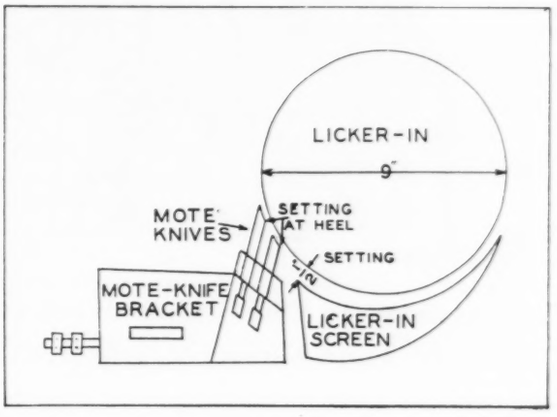
"All right, Mr. Wright, you set them now," replied Ben.

Of course a bit of alteration was made in the settings, still it goes to show that a sense of touch is often variable. The fitter had done something like an hour or more of clothing between times and his hands had naturally acquired a different sense of feeling while doing this.

More Comments on Table of Settings

Now I previously stated that I would comment on *No. 4* table of settings. This job was running Middling, Low Middling and Good Ordinary cotton, and the machinery was far from being kept as clean as it should be. The superintendent said the work had to be kept cleaner, and when told his cards were running too fast he was infuriated, and seemed to think, from the expression on his face, that someone was trying to tell him something that he didn't already know. The cards were running 12.5 r.p.m. of the doffer, 68-grain sliver, from a 16.5-ounce lap, 48 yards long. The drawing was running 335 r.p.m. on the front roll, high speed no doubt, and since at the present time the help has all the machines that they can say grace over, it is too much to think that spotless machines are kept at every moment of the day. The work would have run much better if the cards and drawing had been run slower, and the sliver even lighter. Had this cotton been carded better the short fibers would not have been so great in number on the subsequent processes. The combs on the cards had to be run at the highest speed that they were set up for. I rather favor cutting the speed of the combs as it tends to keep the comb boxes in better condition, as well as lessening the amount of oil that will be thrown out, and naturally this also brings down the amount of lubricants used. Do not take it that I do not believe in using plenty of oil, but excessiveness is just mere waste in anything.

Going back to the May 1934 issue, "K. C. (CONN.)" asks a question about tension on metallic drawing rolls, some ends sagging, and others running taut. I had such an experiment at two places similar to this, and the remedy was to have the bottom roll collars measured with a micrometer and then have the top rolls built up to this size so as to have the same speed on the surface of the rolls. In one of these instances it was necessary to have the entire sets re-worked and new collars put onto them and equalize their sizes, but afterward the ends ran wonderfully well. It might be well worth saying that a lot of the weaknesses of yarn can be remedied by having the ends on the draw frames to run a bit less taut than they are running. A tight end on a drawing frame does look a lot better than those that are running slack, but results count.



This drawing illustrates "J. R.'s" method of lowering the licker-in screen . . . .

I am not desirous of getting into an argument with "WASH", as he has got more sense in a minute than I have in a week, and the amount of his experience in the textile field as compared to mine is too great to regard mine as anything. But still I have had some of the experience on a fly frame as he outlines on page 83 of the May 1933 issue of COTTON: The ends slackening and then picking up again, no gears slipping, all keys in good shape, and the cones being tight in their places. This trouble was on slubbers, and there is one make of American slubbers, well in fact all of their fly frames, on which it was for a long time a problem to me to get the ends to run right from the beginning to the end of the doff. Still the improvement that I have made on the frames on my job is really appreciated, and I could use some other helpful information if it would make them run better. I will relate some of the experiment.

On .43-hank roving on the slubbers, we had on 30 tooth bottom cone gears, using 31 lay gears, and 80 tension gears, and these frames were not running as evenly as they should from beginning to end of doff. This condition that "WASH" relates was there and we had to take up and let off at times on them. Of course you will please understand that we often changed the tension gear in order to get them to run better. Well, the bobbins were not as large as we wanted them. I changed the bottom cone gears to 29, set the cone belt back, and this helped considerably. Then they had a tendency to tangle at the top of the bobbin, and strange to say the same bobbins did not tangle at every doff. Some doffs would not tangle at all. Others some 3 to 12 bobbins would slip over end, and naturally we had more slubber waste than usual. Then I changed the lay gears to 30, this helped some, but not enough, but still this left a base that the rest of the bobbin was built on that was not as firm as the remainder of the bobbin, so a large amount of the tang-

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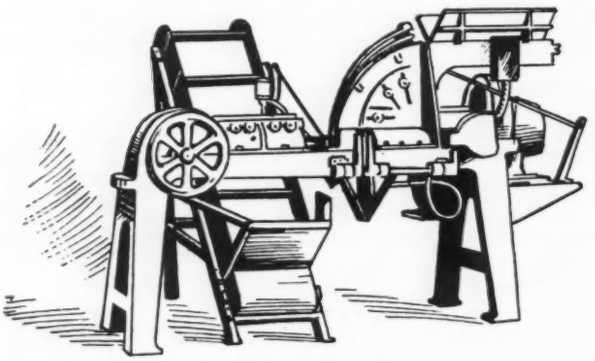

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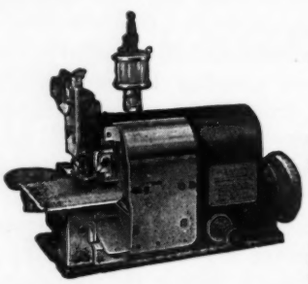

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ling remained, though not as great as it was before. Then I thought a 29 tooth lay gear would pile it; we were still having to take up on about the fourth change of the bobbin—but I tried it, and then ran four doffs without an end coming down, or having a bobbin to tangle and no adjustment on the tension during the doff. Is that results?

More might be said, but I worked a similar trick on 2.60-hank roving, 32-tooth bottom cone gears changed to 31, 26 lay gears changed to 22, and the frame hands tell me that they run better than they ever have. On the slubber, this allowed me to put on four more ounces of roving, and on the roving frames, 2½ ounces additional to each full bobbin. That helps considerably in doffing, and subsequent creeling.

Putting belt dressing on cone belts in my opinion is useless from what I have seen. Usually when the cone belts begin slipping, oil is many times the cause. By wiping off the oil the cone belt will stop slipping, unless the bottom cone bearing at the small end is worn; if this is the case, then new bottom cone bearings are the best remedy for this case. But be sure that the studs are worn oval shape.

"CONTRIBUTOR No. 6242" on page 79 of the July 1933 issue asked if it is advisable to oil fly frame bolsters. At that time I would have said "No", now one and a half years later my answer would be the reverse. Now you wonder why.

At the present time we are having a lot of spindles reversed, and these are coming to us in good condition, and uniform in diameter, and in a number of cases I have found a lot of bolsters worn very much on the inside. Had there been a little oil in these from time to time I feel as though these bolsters would not have to be replaced. And still another thing that these spindles have convinced me of is that the tops of the spindles should be wiped frequently with oil soaked waste, as a lot of the spindle tips are worn as much as 1/16-inch under the size of the inside diameter of the flyer boss.

This will be enough at this time, as I have been watching what the other boys have been saying for about a year now, and I hope that somebody will get something else on the pages as interesting as what "WASH" has been giving us.

J. R. (ALA.)

How Do You Keep Your Cotton Accounts?

EDITOR COTTON:

Our system of handling our cotton accounts and records is not entirely satisfactory and we would like to know of the systems and records of other mills that buy their cotton in a method similar to ours.

We have our cotton office separate from the mill office and carry a separate account at the bank for payments. We then make invoices to the mill and they give us check for the cotton account. Our cotton is bought at two local warehouses, sometimes by commission buyers and sometimes not, and then there are our purchases from shippers that represent a majority of our cotton bought.

This cotton is drayed to the mill and put in the mill warehouses. This means that cotton is coming from three different sources to the mill and is going into one or five or six warehouses. This requires considerable detail work to keep, particularly when we have to sell cotton out of our stock.

I would like to hear from any mill that handles cotton along this line and see how they keep their warehousing records straight.

CONTRIBUTOR No. 6559

Causes of Filling Breaking on the Change

EDITOR COTTON:

As stated in his question* on page 102 of March COTTON, "CONTRIBUTOR No. 6458" is having trouble with his filling breaking on the change. Without any effort to put the causes in the order of their importance, I will state a few of the most common of these.

Sometimes the transfer is made too deep. When the change has been completed, the transferer should be far enough from the rings on the bobbin to allow the shuttle a small amount of play. To check this, the loom may be turned by hand and made to transfer; with the loom on front center there should be approximately 1/16-inch distance between the transferer and the rings on the bobbin.

The transfer should be from back to front. If the lay is not properly set, the bobbin will be rolled in over the front of the shuttle. When the transfer has been completed, the transferer should barely clear the back of the shuttle. Care should be taken that the lay is not set too far forward as this will cause the bobbin to be rolled in on the back of the shuttle.

The transferer should be set so that the butt of the bobbin is driven slightly ahead of the tip. This causes the tip to be turned slightly upward, allowing the filling to unwind enough to prevent breakage.

The top holder in some cases will be set too high and instead of resting directly under the bobbin is held against the filling so that as the bobbin is depressed, the top holder makes it turn, thus breaking the filling.

When the picker is worn or bored too deep, the shuttle goes too far under the battery. As the transfer is made, the butt of the bobbin strikes against the shuttle spring cover pulling the shuttle away from the end of the lay. If the binder is too loose this will happen also.

Filling breakage is often caused by the shuttle bouncing and allowing only two rings on the bobbin to be caught by the shuttle spring. Then the tip of the bobbin is too near the shuttle eye which causes ballooning.

Sometimes the cast iron shuttle eye has been bent and does not let the yarn thread itself properly.

Bristles were never intended to be used as a tension; their function is merely to prevent excessive ballooning. They should be set at an angle of 45

*Other discussions of this subject appeared on page 118 of the May, 1936, and page 103 of the June, 1936, issues of COTTON.—The Editor.

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213. Saco-Lowell Cotton Machinery—Twisting—a 36 page illustrated brochure explaining the company's twisters and parts, including the four basic type twisters, features of new construction and general notes on twisting. Production calculations and specifications are included. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

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218. Butterworth Electric Guiders—6-page folder describing and illustrating the new Butterworth Electric Cloth Guider. This guider is built on the same principle as the Foxwell Air Guider and is unexcelled for fast, accurate guiding. H. W. Butterworth & Sons Co., Philadelphia, Pa.

219. My Strap-Book by Doc Steelstrap—16 page illustrated catalog describing the hundreds of ways that Acme steel strap can be used to advantage in connection with paper boxes and wraps in making safe, economical shipping packages. The strap-book will convince you that Doc Steelstrap and his assistants do a thorough job of the packing and shipping business. Acme Steel Co., Chicago, Ill.

220. The American Monotractor—24-page booklet illustrating electric drives for cranes, hoists and carriers on MonoRail conveying systems. This book outlines some of the control features that make possible complete and semi-automatic transportation of heavy loads from process to process, building to building. The American MonoRail Co., Cleveland, Ohio.

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55. Interpretation of Analysis for the Layman—An eight page booklet explaining what the various items used in fatty oil and sulfonated oil analysis mean, enabling the ordinary textile man without chemical education to interpret the various chemical analyses. National Oil Products Co., Harrison, N. J.

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77. Bulletin S 200—Illustrating and describing the new Reeves Variable Speed Drive for spinning and twister frames, explaining its many distinct advantages and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

88. Dayton Cog Belt Catalog—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

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102. White and Light Shade Cotton Fabrics Dyeing and Finishing. National Oil Products Co., Harrison, N. J.

103. Throwing Rayon Crepe. National Oil Products Co., Harrison, N. J.

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CONTINUED ON PAGE 90

degrees to the bobbin and should never extend beyond the center line of the bobbin. It is a mistake to use more bristle than is necessary as this causes stiffness and will break the filling.

The shuttle should be inspected to see that it is in good condition; there should be a well-cut groove on the front and bottom; the spring should be tight and aligned so that the bobbin will be held in the proper position; all splinters and bruised places should be dressed off.

Bobbins should be inspected periodically. The conditioning of filling sometimes causes the bobbins to become soft and easily burred at the tip. If a tip is used it should not be sharp.

When the bobbin is placed in the battery, the yarn should be drawn taut or it will sag and the lay will wear it in two.

The thread guide notches should be directly opposite the tip of the bobbin and the thread placed in the next notch back. This places the yarn slightly behind the shuttle eye so that it is easily threaded as the loom picks. This will also place the yarn out of reach of the picker stick.

Occasionally the battery hand breaks the yarn before the loom changes and the loom is blamed for it.

CONTRIBUTOR No. 6472

Temperature and Humidity in Weave Room Over the Week-End

EDITOR COTTON:

"CONTRIBUTOR No. 6436" brings up, on page 89, January COTTON, the question*, "What are considered to be the best temperatures and relative humidity to try to maintain in the weave room over the week-end during the winter months?" He goes on to point out that if the weave room is kept too warm, with insufficient humidity, the filling sloughs off and the warp becomes brittle. He also points out that the room being too cool, the weaving does not start up well.

It is interesting to read comments on this subject from a number of mills. In the writer's mill we have been working on the question for some time and while we have improved our condition somewhat we are still not satisfied with our Monday morning start-up.

Our conclusions thus far have shown that there are two broad divisions to be considered. One of these is summer and the other winter. The summer conditions are neither as harmful nor as troublesome as the winter and we seem to be getting very nice results by starting up our humidity in the spinning and weaving from two to three hours before the mill starts on Monday morning. We have found that care must be taken not to get too much humidity but that it is decidedly advantageous in extremely hot weather to start the humidity ahead of time. We have varied this procedure by starting up the humidity on Sunday and then again on Monday morning but find very little difference from the early Monday morning start-up.

Our worst difficulties have been encountered in winter time when it seems that permitting the mill to get cool tends to dry out the filling and make the warp run bad or if the mill is kept at a temperature of 75 degrees the heat has about the same effect.

With the heating system in our mill, in very cold weather, it is impossible to keep the temperature over 75 degrees. This temperature seems high enough to get away from the drying out experienced in a cold temperature and we have found no advantage in maintaining a temperature higher than 75 degrees. The practice of starting humidity early Monday morning does seem to help as it does in the summer time. In addition to this, we are careful to store our filling where it can obtain the benefit of the humidity and where it will not dry out excessively.

Another thing that seems to have helped our warp yarn is putting humidifiers over our warps stored in the tying-in room. This helps the Monday morning trouble and we find another gain in that our tying-in machines do better work and get better production.

CONTRIBUTOR No. 6443

*There were other discussions on this subject on page 125 of the February, 1936, issue, page 113 of the May, 1936, issue, page 97 of the June, 1936, issue, and page 95 of the July, 1936, issues of COTTON.—The Editor.

More Answers to Spinning Questions

EDITOR COTTON:

In answer to "CONTRIBUTOR No. 6440" who asks on page 89 of your January issue some questions* relative to print cloth spinning, I should like to offer the following.

The most common cause for ropy filling is the ring rails traveling too slow on the downward stroke. I suggest that anyone having this trouble put a triple worm gear on the vertical shaft that is driven by the heart gear; also that he use a variable speed cam which will cause the yarn to cross over the layers already on the quill. His stroke should be about an inch and a half; the speed of the ring rail should be such that there will be no more than 24 inches of yarn in the downward stroke. If he will do this, and see that his quills are in good shape, and use the proper traveler, he will not have ropy filling.

I believe it is proper to have the ring rail go down fast because then the preceding layers of yarn are crossed.

The life of travelers in our plant is about 240 hours.

His end breakage of 31.25 per thousand spindle hours is fair running work on 30s warp yarn with a front roll speed of 104 r.p.m.

A doffer should be able to lift about 62,000 bobbins in 40 hours.

CONTRIBUTOR No. 6468

*Other discussions on this same subject appeared on page 131 of the February, page 107 of the March, page 115 of the April, page 121 of the May, and page 101 of the June, 1936, issues of COTTON.—The Editor.

HELPFUL BOOKLETS FREE...

Continued from Page 88

131. Houghton's Leathers for the Textile Industry—This valuable handbook contains 88 pages of data on the proper selection and application of all types of textile leathers, including belting, special spindle belts, round leather belts, loom leathers, mill strapping, leather aprons, etc.—E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

132. Houghton on Sizing Products—Thirty-two pages of valuable information on sizing of cotton warps and yarns. Gives detailed information on how to conduct sizing tests and contains tables for recording results. It describes the requirements of different types of yarns and gives actual formulas for producing desired finish. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

134. STA-PUT Lubricants—A brief description of an entirely new type of tough film lubricants which not only gives greater protection to bearings but eliminates oil drip and reduces lubrication costs. STA-PUT Lubricants are made in grades to suit all types of textile machinery. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

135. The Pick Method of Weaver Wage Payment—A manual of practical information describing methods to be followed in using Pick Counters; suggested forms, and tables included. Durant Manufacturing Co., 1932 No. Buffum St., Milwaukee, Wis.

139. Textile Detergents—Theory of the use of alkalis and control of pH.—This 32 page booklet explains in simplified manner for the benefit of the layman the chemical processes that take place in using textile detergents in the finishing of textile goods. It contains many useful tables and data. Detergent Products Corp., Peachtree Bldg., Atlanta, Ga.

140. Textile Machinery—Improvements in Design and Methods of Lubrication. A discussion of the problem of lubrication of textile equipment covering operating conditions and factors affecting and affected by lubrication. Card Room Operations, Twisting and Spinning Machines, Silk Throwing, Looms, Knitting Machines, etc., covered. Available in copy of June 1934 issue of "Lubrication." The Texas Company, 135 E. 42nd St., New York City.

141—V-Belt Engineering Data Book—Over 50 pages of pertinent engineering information including data on selecting a V-Belt drive design of special V-Belt drives, numerous standard tables, charts and belt and sheave list prices. Manhattan Rubber Manufacturing Div. of Raybestos-Manhattan, Inc., Passaic, N. J.

143. Winders and Winding—Describing the various processes in the preparation of cotton, woolen and silk yarn and illustrating and describing the different types of Universal winders and the various attachments to suit the particular winding requirements of the various branches of the textile industry. Universal Winding Co., 95 South St., Boston, Mass.

147. Let's "CAN" The Oil Can—describing permanently sealed bearings for life, and for higher speeds and temperatures single seal ball bearings which have to be lubricated only from one to three years. New Departure Mfg. Co., Bristol, Conn.

150. Engineering Data Book on Mechanical Rubber Goods—21 pages of useful information and engineering data, designed to simplify the selection of belting, hose and other mechanical rubber goods for industrial service, including a review of belting requisites for a wide variety of uses as well as helpful tips on installation procedure. B. F. Goodrich Co., Mechanical Division, Akron, Ohio.

152—Plant Checkup List—Crane Co., 836 South Michigan Ave., Chicago, Ill.

154—Johnson Bronze Bulletin No. 340—showing over 600 sizes Johnson general purpose bronze bushings. Johnson Bronze Co., New Castle, Pa.

155. Link-Belt Catalog 1274 on the P.I.V. Gear—giving details of this positive variable speed control. Link-Belt Co., 910 South Michigan Ave., Chicago, Illinois.

156. Link-Belt Engineering Data Book No. 125—showing features and giving engineering data on Link-Belt silent chain drives. Link-Belt Co., 910 South Michigan Ave., Chicago, Ill.

157. Grading Rules and Complete Specifications for Laying and Finishing Maple Floors—Maple Flooring Manufacturers Association, 1794 McCormick Bldg., Chicago, Ill.

163. Roto-Koner—Bulletin describing the new No. 44 Universal Winder, known as the Roto-Koner for winding knitting yarns, which has many new and distinctive features. Universal Winding Company, 95 South St., Boston, Mass.

164. Johnson Rotary Pressure Joints—Bulletin describing this rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instructions, types, sizes, dimensions and prices. The Johnson Corp., Three Rivers, Mich.

165. New Departure Speed Power Unit—Bulletin giving details of this compact, self-contained driver that gives a thousand different speeds at a turn of the wrist. New Departure Manufacturing Company, Bristol, Conn.

166. Better Cones The World Over—Bulletin describing the Universal No. 50 Winder for silk and rayon. Universal Winding Company, 95 South Street, Boston, Massachusetts.

168—The Tube-Tex for Tubular Knit Goods—Bulletin describing this modern machine which extracts, processes, dries, conditions and folds in one continuous operation, lowering costs, saving labor, power, space and waste. H. W. Butterworth & Sons Co., York and Cedar Sts., Philadelphia, Pa.

169. Tube-Tex High Speed Steamer and Finisher—Describing these new steaming and finishing machines for tubular knitted fabrics, which handle cotton, rayons, woolens and mixtures at speeds up to 45 yds. per minute, being unique in that patterns, designs and stripes are furnished straight and free from any distortions. H. W. Butterworth & Sons Co., York and Cedar Sts., Philadelphia, Pa.

170. Gates Textile Accessories—Showing the increased efficiency and economy to be secured through the use of Gates cone belts, evener belts, card bands and loom binder cushions. The Gates Rubber Company, Denver, Colo.

171. Design of V-Belt Drives—48 page booklet full of valuable tables and data showing the type, number and design of V-Belts that will give the greatest efficiency on each particular drive. The Gates Rubber Company, Denver, Colorado.

176. Sonoco Products—A 60 page illustrated booklet giving descriptions, specifications and charts of the many Sonoco products, including: bobbins, cones, tubes, cork cots, roving cans, spools, rolls, etc. Sonoco Products Co., Hartsville, S. C.

177. New Advances in Loom Equipment—12-page booklet describing discoveries and advances which loom manufacturers have made in keeping pace with these discoveries down to the present time—non-technical informative, amply illustrated. Emmons Loom Harness Co., Lawrence, Mass.

179. Improved Airplane Propeller Exhaust Fans and Ventilating Equipment—a 40-page catalog showing the important factors to be considered in a propeller type fan to secure the greatest efficiency, with data and tables showing fan capacity and details of each type and size of fan and views of typical installations. Propellair, Inc., Springfield, Ohio.

180. These Extra Cushion Cork Cots Offer Six New Advantages—a 6-page folder which tells the story of the new Armstrong's Extra Cushion Seamless Cork Cot from the viewpoint of the mill man. The folder describes HOW the new cot is of advantage to mills spinning cotton yarn; WHY it is better, and something about its method of manufacture, and also gives PROOF in the form of some tests that have been made with this new roll covering material. Armstrong Cork Products Co., Textile Division, 930 Arch St., Lancaster, Pa.

183. Schieren-izing—describing leather belt manufacture from the selection of hides through the various processes to the final tests, also showing illustrations of belts with unusually long service lives. Chas. A. Schieren Co., 31 Ferry St., New York, N. Y.

184. Speed Control Handbook T-35—new reference book on variable speed control, said to be the most complete and helpful book on this subject ever published, 112 pages and more than 200 illustrations of interest to every production executive, purchasing agent, superintendent, overseer and master mechanic. Reeves Pulley Co., Columbus, Ind

185. Dulux—The White Finish that Stays White—New book describing the new ten-point finish for factory walls and ceilings, the finish that stays whiter, stays cleaner and stands repeated washings. E. I. duPont de Nemours & Co., Finishes Division, Wilmington, Del.

186, F-7 Feeder Bulletin — Describing the better blending that is secured and the important cleaning operation that is added by using F-7 feeders in place of bale breakers. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

187. The Wildman Single Head Full-Fashioned Hosiery Machine—Literature on request from the Wildman Mfg. Co., Full Fashioned Division, Norristown, Pa.

188. Form 374—This form enables you to gather your own cost data on your sewing machines and determine whether new Union Special Machines will show big savings. Furnished free by Union Special Machine Co., 400 No. Franklin St., Chicago, Ill.

190. Warp Conditioning Units for Synthetic Yarn Slasher—booklet giving full details will be sent free to mill men who write on their company letterhead. Chas. B. Johnson Co., Paterson, N. J.

191. The Bahnson Humiduct—bulletin describing Bahnson Humiduct system which combines humidifying, heating, ventilating and air conditioning all in one unit, will be sent free on request. The Bahnson Co., Winston-Salem, N. C.

192. Wood Tanks for Every Purpose—100 page illustrated catalog showing the advantages and lasting qualities of wooden tanks. Rubber-lined tanks for dyeing and other uses in the mill are illustrated and discussed in detail. Hauser-Stander Tank Co., Ammen Ave. and Spring Grove Ave., Cincinnati, Ohio.

193. Short Cuts to Power Transmission—72 page illustrated booklet containing all information needed in solving any ordinary belt transmission problem, informative material on belt joints and transmission practice and a quantity of useful tables and data. Flexible Steel Lacing Co., 4607 Lexington St., Chicago, Ill.

194. Accurately Checking Spindle Speed—A three page booklet describing the Strobotac, a tachometer operating on an entirely new principle for observing and measuring spindle speeds anywhere between 600 and 14,000 rpm. General Radio Co., 30 State St., Cambridge, Mass.

195. Never Buy Sponges in the Rain—Booklet outlining the importance of knowing the percentage of moisture in a given textile in the buying and selling of the same and in connection with the working of textile fibres in the process of manufacturing the goods, also showing different types of conditioning ovens for determining moisture content. Emerson Apparatus Co., 174 Tremont St., Melrose, Mass.

196. Economy of Diesel Engine Power—Bulletin No. 3030, 44 pages, illustrated, giving advantages of diesel power in industrial plants. Fairbanks, Morse & Co., Chicago, Ill.

197. Extra Life for Chain Link Fence—A folder telling about Bethanized Wire and explaining its advantages for mill and factory protection. Anchor Post Fence Co., Eastern Ave. and Kane St., Baltimore, Md.

198. The Perfect Loom Let-Off—Folder pointing out the advantages of the new asbestos friction loom let-off and giving specifications and price list. Fiber Mfg. Co., Newton, N. C.

COTTON, Grant Bldg., Atlanta, Ga.

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KNITTING SECTION

Southern Knitters Hold Profitable Convention on Signal Mountain

A REPRESENTATIVE group of southern hosiery manufacturers and their friends attended the annual convention of the Southern Hosiery Manufacturers' Association, held at Signal Mountain, Tenn., on Friday and Saturday, July 10 and 11. Several timely and valuable speeches, and important reports of officers and committees, featured the business sessions; and a golf tournament and banquet provided enjoyable diversion and entertainment.

Donald Comer, president and treasurer of the Avondale Mills, of Alabama, and the present president of the American Cotton Manufacturers Association, spoke at the Friday morning session, discussing mainly current problems of the textile industries, especially that of Japanese competition; and Albert W. Taber, prominent Chattanooga attorney, presented a discussion of the 1936 federal tax bill.

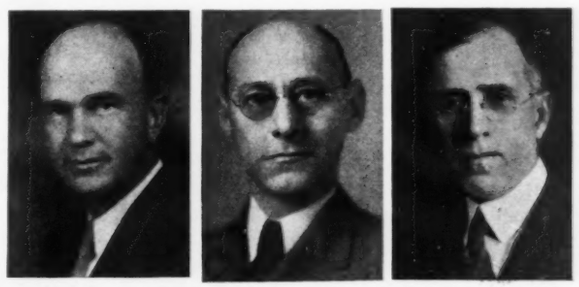
R. O. Huffman, of the Morganton Full-Fashioned Hosiery Mills, Morganton, N. C., presided as president of the association, assisted by Taylor R. Durham, of Charlotte, its executive secretary.

Officers for the coming year were elected at the Friday morning session. Henry T. Bryan, Jr., president of the Bryan Hosiery Mill, Inc., Chattanooga, Tenn., was made president of the association; P. W. Eshelman, president of the Wilkes Hosiery Mills Company, North Wilkesboro, N. C., was made vice-president (seamless division), and A. Straus, Jr., president of the Archer Hosiery Mills, Columbus, Ga., was made vice-president (full-fashioned division). F. Seifart, of Hudson Silk Hosiery Company, Charlotte, N. C., was made association treasurer.

A. D. Crenshaw, who presented the report of the nominating committee, which was unanimously adopted, explained that in the selection of nominees for offices and directorships, an effort was made to distribute the offices equitably both from a geographical standpoint and in relation to the seamless and full-fashioned divisions of the industry. Eight directors were elected: H. G. Roberds, Villa Rica Mills, Inc., Villa Rica, Ga.; John M. Berry, Rome Hosiery Mills, Rome, Ga.; Walter Brockmeyer, Paul Knitting Mills, Pulaski, Va.; J. J. Corrigan, Slane Hosiery Mills, High Point, N. C.; R. A. Maynard, Tower Hosiery Mills, Burlington, N. C.; F. O. Pfingst, Greensboro Full-Fashioned Hosiery Mills, Inc., Greensboro, N. C.; J. R. Smith, Paducah Hosiery Mills, Paducah, Ky.; and R. O. Huffman, of Morganton, who as retiring president automatically became a member of the board of directors.

In opening the meeting, instead of a formal president's address, Mr. Huffman commented briefly on conditions in the industry, and made supplementary comments following each speaker. He brought out that although some of the problems of the industry seem currently to be relieved, that under all circumstances, "I think we realize that we can best handle our affairs through an organization such as this."

Secretary Durham read the minutes of the 1935 meeting at Asheville, the treasurer's report and the secretary's report, all of these showing that this young organization, formed only 2½ years ago, has become an integral part of southern knitting and is rendering a continuous, helpful service to the mills of the South. The organization's membership now comprises about 95 per cent of the full-fashioned equipment of the South and about 65 per cent of the seamless producers, as well as an extensive associate membership among machinery and supply and yarn manufacturers.



NEW OFFICERS AND CONVENTION SPEAKER

Left to right: Henry T. Bryan, Jr., of Chattanooga, new president of SHMA; P. W. Eshelman, of North Wilkesboro, N. C., new vice-president (seamless division); and Donald Comer, head of southern cotton manufacturers, who spoke Friday morning.

Donald Comer Assails Asiatic Imports

As the first speaker of the morning, Donald Comer brought to the knitters a message from the southern cotton manufacturers, whose organization he heads. He declared that the cotton mill association is "doing its dead level best to preserve a few of the gains made under the voluntary agreement of 1933". He said that this job would not be concluded until every mill now outside the fold on these prin-

ciples had voluntarily conformed to them.

Taking up the subject of Japanese competition, Mr. Comer declared that imports from Japan and India are making such inroads into the domestic and other markets, under reciprocal trade agreements, that the situation threatening American industry is

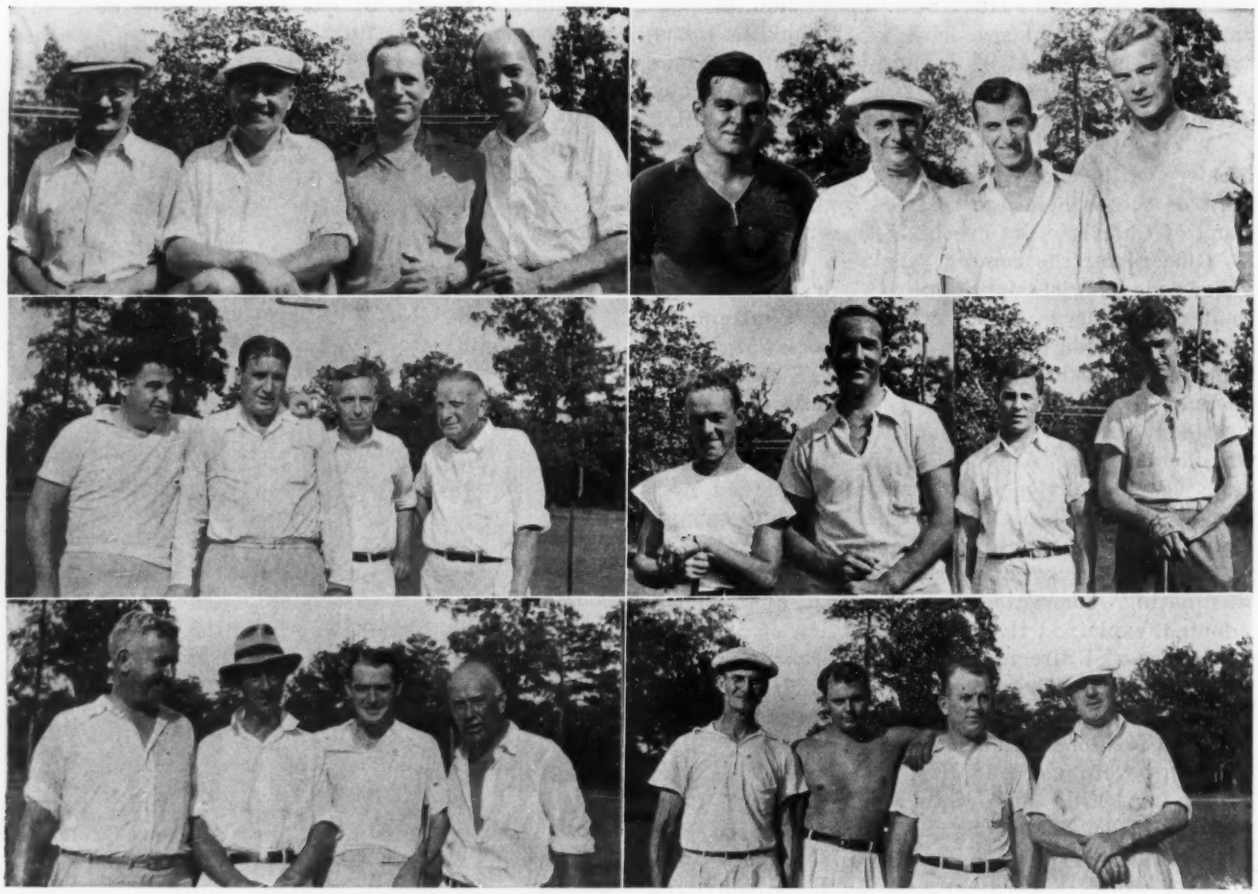
TAYLOR R. DURHAM, Charlotte, N. C. executive secretary of the youthful but vigorous Southern Hosiery Manufacturers Association since its organization in 1924 . . .

alarmingly serious. He expressed his affection for and high regard for the abilities of Secretary of State Cordell Hull, but declared that "Mr. Hull is hurting us", because he is not prescribing a quota or limit on foreign imports.

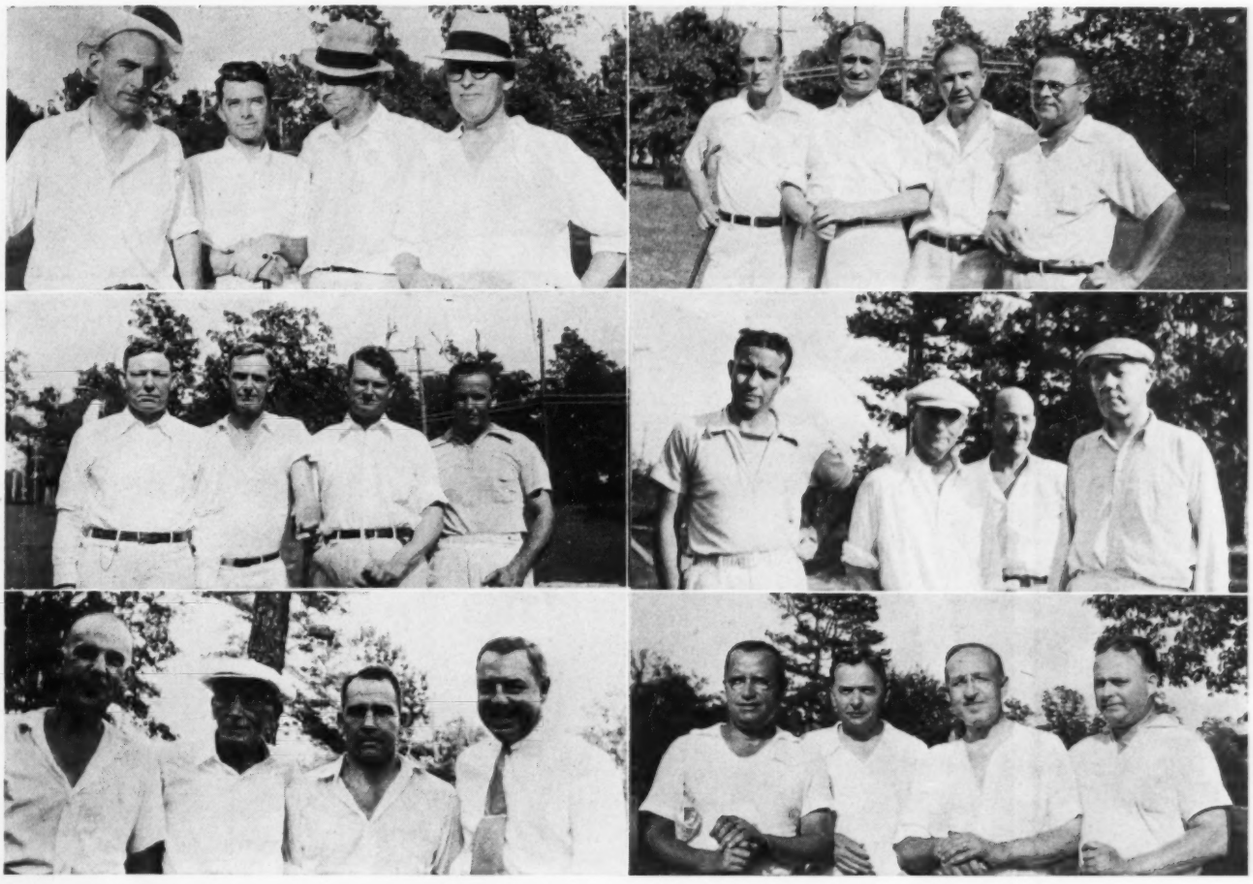
"I am not talking to Mr. Hull today about reciprocal trade agreements between nations," said Mr. Comer. "I want to trade. I want to swap everything we have in this country that we do not need for everything we do need, but there are some things we do not need. I want to talk about the program of an American policy that says to the Asiatics, the Hindoos and the Japanese, that they cannot come over here and let the products of their 10-, 15- and 20-cent-a-day labor come over here in competition with our goods, where we are paying an average of 38 cents per hour. * * *

"The *Chattanooga Times* took issue with me not long ago on this question of imports from Japan. They said it was a local question. All right, let's admit that it is a local question. I say that Japanese goods coming into this country shut down my mill in Birmingham and put the people on short time. It took me off of a fabric that I had been making for 20 years and put me onto bag cloth, with the labor and skill that I had developed on colored cloth, and I am having to start all over again. But every loom that I put on bag cloth immediately competes with some other loom in this country already making it. Our market for the particular fabric that I was making is drying up. We have lost this business to Japan.

FOURSOMES OF MILL MEN AND THEIR FRIENDS SNAPPED BY "COTTON" AT SIGNAL MT.



Among those who played in the SMHA golf tournament at Signal Mountain last month. Reading from left to right, by foursomes:
Top row: John K. Voehringer, Jr., Greensboro; Chick Harding, Greensboro; Z. A. Ross, Belmont; and Henry Blake, Greensboro. Selman Fortune, LaFayette; W. A. Enloe, LaFayette; Henry Crumbliss, and David Binney Putnam.
Second row: T. Max Watson, Spindale; Fred Lemmond, Greensboro; Clarence Burton, Lynchburg; and Herman Vetterline, Philadelphia. Richard Smith, Atlanta; Jim Foil; Jim Eyster, Chattanooga; Joe Ballentine, Charlotte.
Third row: Reid Maynard, Burlington; Sam Diggle, Charlotte; Alex Rankin, High Point; Buck Cheatham, Burlington; Walter Brockmeyer, Pulaski, Va.; E. W. Wendle, Chattanooga; Bill Jackson, Chattanooga; and Richard Edge, Charleston, Tenn.



More of the hosiery tournament foursomes. Left to right, by foursomes: Top row: Jim Hartford, Athens, Ga.; Frank Coker, Charlotte; George B. Smith, Chattanooga; R. C. Thatcher, Chattanooga. Ed McMillin, Rossville; Ed Martin, New York; Dudley Bryan, Greenville, S. C.; and George M. Porges, New York.
Second row: Ben Gaddy, Durham; Fred Hallenbeck, High Point; Bob Howerton, Charlotte; and Clyde Gordon, Burlington. W. L. Coggins, Chicago; F. S. Wilcox, Union, S. C.; L. H. Oswald, Chicago; and H. A. Vestal, Athens, Tenn.
Third row: George West, Chattanooga; Ben Dabbs, Chattanooga; Bud Johnston, Chattanooga; and Don Hurlbut, Chattanooga. Carl Eiser, New York; T. J. Wallner, Pulaski, Va.; S. J. Singer; and N. P. Murphy, New York.

"I like a fair fight, but I do not like to fight things I cannot see, or handle matters where I have to work through the other fellow, and yet in this case we are fighting with and through the other fellow. Secretary Hull would not want to put out of his home a white cook or a white maid that he is paying an American wage to, and supplant them with a Japanese maid or cook or an Indian maid or cook. He can get them and pay them 25 cents a day. But we said these people cannot come over here. I say to Secretary Hull that I want to know how much stuff from India and Japan, made by those people working at less than 30 cents a day in Japan and 10 cents a day in India, he wants to come over here and take jobs away from your workers and my workers. * * *

"In our business, the bleached goods part of our business is purely local, it is not our total production, but Japan is in a fair way to capture 50 per cent of the market for that particular product. I do not make that cloth in my mills, but the employees in those mills that are making it are going on short time and the plants themselves are being jeopardized.

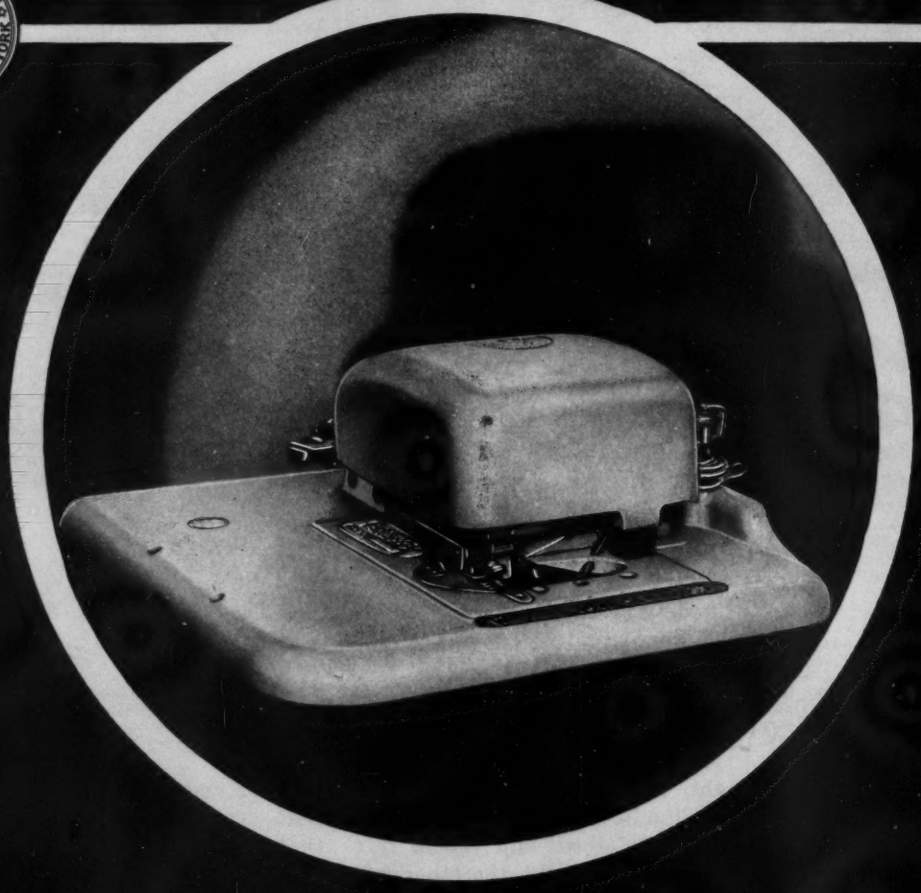
"I want to know how many goods we are going to take from Japan. This country went to war in 1775 because of taxation without representation, and yet today trade agreements are being made in secret lives of your employees, and you do not know what that affect your business and your lives and the that trade is. You cannot tell, because these trades are made rather secretly, and you do not know whether it is your goods or my goods that are being affected."

Mr. Comer told of the efforts of southern senators to get a tariff on jute to protect cotton. "Cotton is the only thing that is not protected," he said. "We have a tariff on wheat, on rice, and oil, and cotton seed oil—all of these things have protection except cotton. There is no tariff on cotton and no tariff on jute to protect cotton against 1,500,000 bales of jute that come into this country a year and take the place of about that much cotton, and putting about 100,000 workers, mainly in this section, out of work."

The speaker said that when anyone tells him he is in favor of exports and imports, he wants to know "what particular imports he is in favor of bringing back into this country." "I am for the good neighbor policy and international relationships," he said. "I want to take sugar from Cuba, and coffee from Brazil, and rubber from the Malays, and tung oil from China, and I am willing to pay them back with anything that we can best export."

Following Mr. Comer, Albert W. Taber discussed in a technical way the 1936 federal tax bill, explaining its provisions and many of its inequalities.

And Now The —



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The Golf Tournament and Banquet

Friday afternoon was devoted to the annual golf tournament for the active and associate members and their guests. The tournament was scheduled at the Signal Mountain Golf Club, but a shortage of caddies there sent a number of the players to the Riverview Club in Chattanooga. A large number of handsome prizes, donated by the association and its associate members, were awarded to the winners at the banquet on Friday evening, where an enjoyable floor show of local Chattanooga talent was also staged.

George R. West, Jr., president of the Dixie Mercerizing Company, Chattanooga, won the prize for low gross score, with a gross 82. The other prizes were awarded for low net scores with handicaps applied. William Jackson, of Industrial Rayon Corp., won a leg on the association's golf cup, receiving also a small replica cup permanently. James McDowell, of the Hemphill Co., received a platter for second low net score; R. O. Huffman, the retiring president, won third low net; other prizes were awarded as follows: Fourth, Dave Long; fifth, T. Max Watson, of Spindale, N. C.; sixth, Herman Smith; seventh, G. S. Johnston, of Chattanooga; and eighth, George Blackwell Smith, of Chattanooga.

A bridge tournament and sightseeing tour were conducted for the visiting ladies on Friday afternoon.

Gerli Talks on Silk

At the open meeting held on Saturday morning, Paolina Gerli, head of E. Gerli & Co., silk importers, New York City, and president of the International Silk Guild, spoke to the knitters regarding the current raw silk situation, later tendering a luncheon to all of the delegates present. Mr. Gerli had recently returned from a survey of the silk industry in Japan, and brought much information of value and interest on the subject. He preferred waiting until the fall, rather than to stampede now into immediate buying of silk by speculation, declaring that at the moment there was a great deal of emotional excitement in the market. Mr. Gerli expressed the opinion that the present year's crop of silk, due to increased production in China and Italy, will exceed that of the former year by more than 100,000 bales.

In concluding the convention, the association went into executive session, and it was later announced that the manufacturers had passed a resolution against the "inequitable features of the new tax bill". The new president, Henry T. Bryan, Jr., was instructed to convey the resolution to all southern representatives and senators in Congress. Secretary Taylor Durham declared that the tax on undistributed profits was the principal part of the new tax measure to which the hosiery manufacturers objected. Acting as spokesman for the group, he declared that the tax on undistributed profits goes beyond merely raising revenue. "It is unsound in penalizing corporations that do not pay their earnings in dividends," he said. "The effect of the tax is to prevent the accumulation of surplus, whether for expansion of a plant or for protection during periods of depression." If it had not been for surpluses, which this tax penalizes, many plants would have been compelled to shut down and throw their employees out of work during the past five or six years."

Hosiery Shipments in May Above Last Year

Figures released by the National Association of Hosiery Manufacturers show that, due largely to an increased demand for women's seamless silk hosiery, anklets, and cotton bundle goods, total shipments of hosiery of all types during May, 1936, at 9,379,143 dozen pairs, were 254,784 dozen pairs, or approximately three per cent more than shipments in May, 1935. Considering cumulative figures for the first five months of 1936, total shipments of all types were 3.8 per cent greater than for the comparable period in 1935. Each major type of hosiery, with the exception of woolen goods, contributed to this gain. In the case of women's seamless hosiery (excluding wool), anklets and cotton bundle goods, shipments so far this year were approximately nine per cent ahead of shipments for the first five months of 1935. Shipments of women's seamless silk hosiery during the first five months of 1936 amounted to 2,041,629 dozen pairs, in contrast to 1,471,328 dozen pairs of such hosiery shipped during the first five months of 1935.

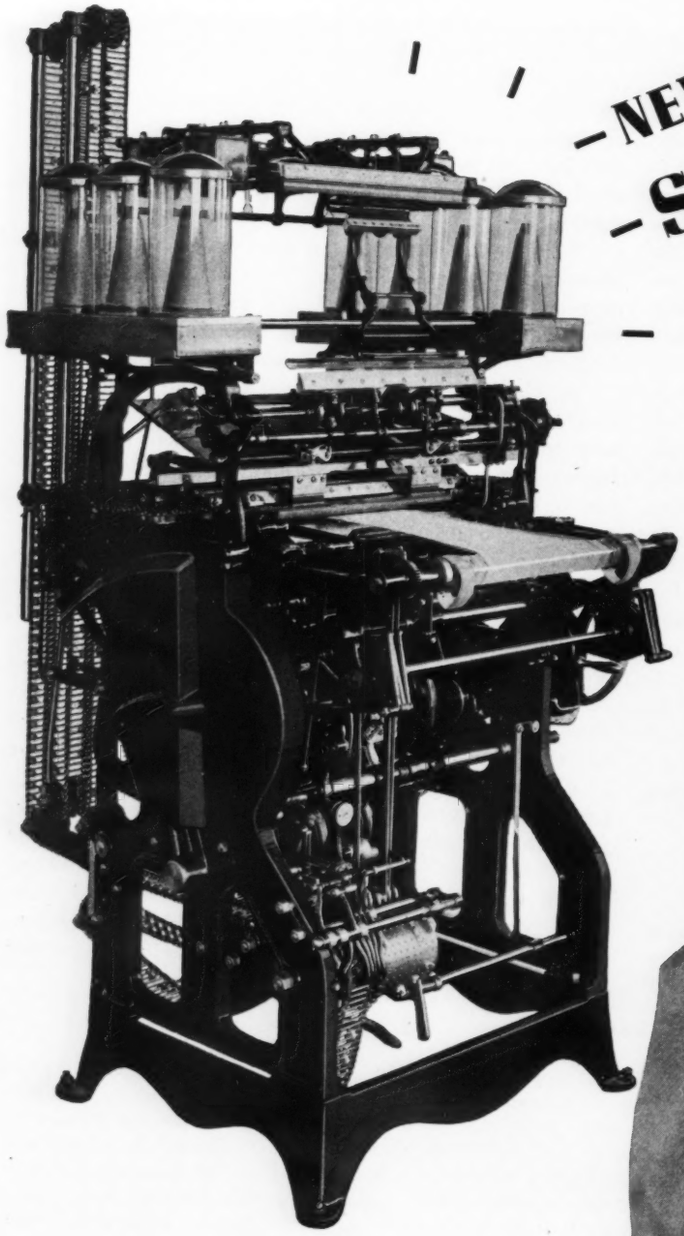
Total shipments of women's knee-length hosiery in May, 1936, reached a new high point at 395,561 dozen pairs, this figure contrasting with 213,591 dozen pairs shipped in May, 1935. Of the 395,561 dozen pairs of women's knee-length shipped in May of this year, 220,851 dozen pairs were full-fashioned and 174,710 dozen pairs were seamless.

Total production of all types of hosiery in May, 1936, at 9,269,554 dozen pairs, was approximately 110,000 dozen pairs below shipments for the month, bringing about a corresponding decrease in stocks. All of this decline in stocks was recorded in the full-fashioned branch of the industry, which curtailed production substantially. Notable decreases in production of men's half-hose (excluding wool) and in production of anklets in May, 1936, as compared with the preceding month, resulted in stock decreases for those types that more than offset seasonal increases in stocks of other major types within the seamless branch.

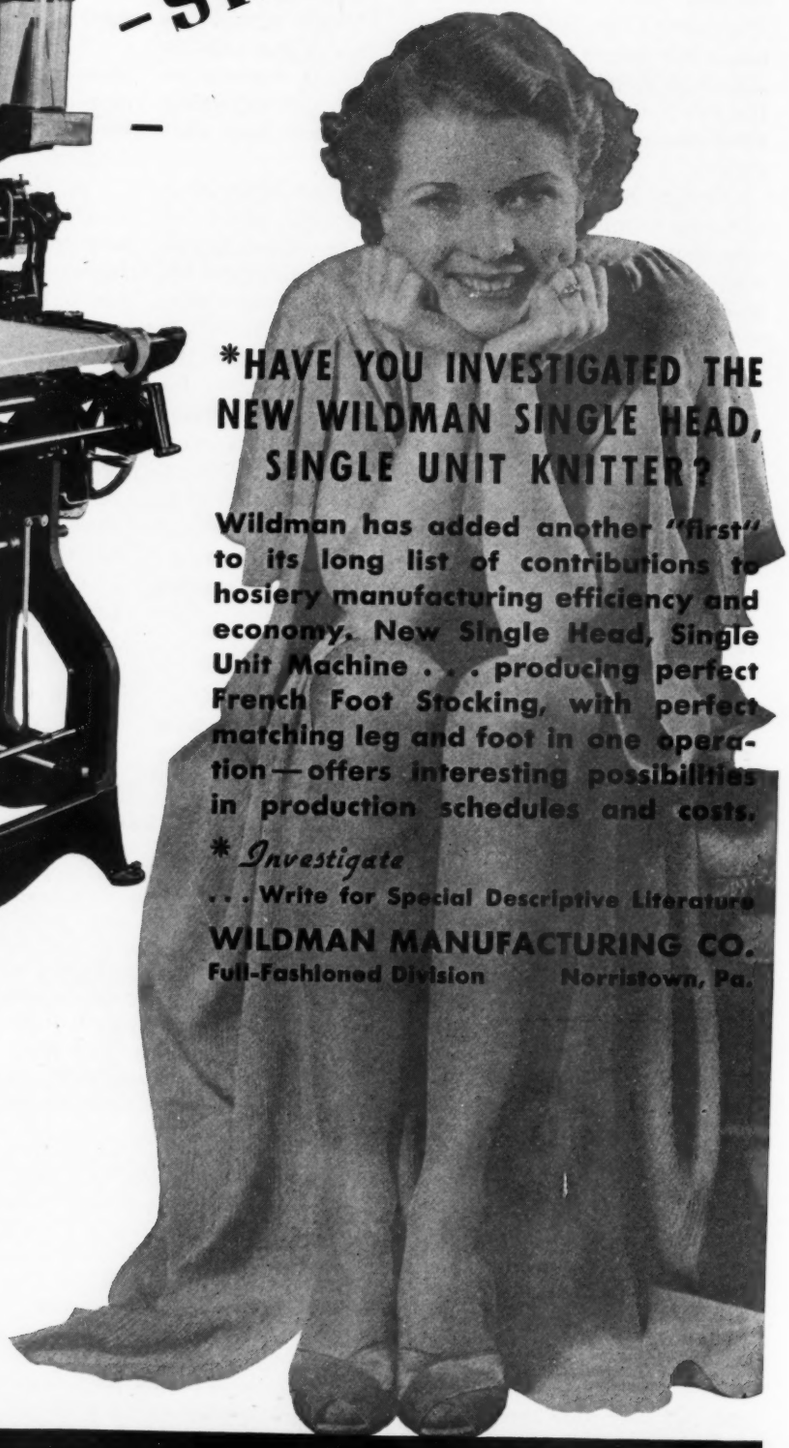
Total stocks of hosiery of all types at the end of May, 1936, amounted to 19,076,449 dozen pairs, which was 469,732 dozen pairs below the amount on hand as of the same date one year earlier. Stocks of women's full-fashioned hosiery, at 5,061,258 dozen pairs, were little changed from such stocks at the end of May, 1935, whereas at the end of April, 1936, stocks of women's full-fashioned hosiery were almost 400,000 dozen pairs greater than were carried one year earlier. Within the seamless branch of the industry, stocks on hand at the end of May, 1936, were below stocks on hand at the end of May, 1935, for each of the major types except children's and infants' hosiery and woolen goods.

Change of Name

The Chain Products Company, with general offices and main works in Cleveland, O., have changed their name to The Hodell Chain Company in order to closer associate the corporate title with their products which are branded "Hodell Chains". This change of name will not involve any other changes in product, personnel, or policies.



-NEW
-STARTLING



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Wildman has added another "first" to its long list of contributions to hosiery manufacturing efficiency and economy. New Single Head, Single Unit Machine . . . producing perfect French Foot Stocking, with perfect matching leg and foot in one operation—offers interesting possibilities in production schedules and costs.

* *Investigate*

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WILDMAN SINGLE HEAD, SINGLE UNIT FULL-FASHIONED HOSIERY MACHINE

High-Pressure Lubrication on Full-Fashioned Machines

Read the experiences of these men with the high-pressure lubrication system and then submit your own ideas on the subject . . . . . .

EDITOR COTTON:

On page 143 of the May issue of COTTON, there is a question from "CONTRIBUTOR NO. 6496", who asks about the saving in power and the effect on parts of the full-fashioned machine equipped with high-pressure lubrication.

All of our machinery is new, the mill is modern and we equipped our machines with high-pressure lubrication to bring them up to a still more modern standard.

When it comes to the amount of power saved, we won't say that it does or does not cut down on the power used but when we go to a machine and turn it over, it seems to take less effort with the new system than before it was installed.

We can't see that a test can be made on the amount of power consumed unless a machine is equipped for that purpose and ours are not. Then too, there is so much that enters into a test of this kind that it probably would not be conclusive anyway. No two machines can be turned with exactly the same amount of power even if the factory tries to make them so. A machine is a machine and no two will run identically.

What we go by more than anything else is the wear on the parts of the machine. With this system we know that certain places get grease at all times whereas before they sometimes ran dry. There are places on the machine that a man just can't get to as well to oil and the high-pressure system takes care of it.

Again we won't say definitely, but we believe that the grease job is done better with high-pressure. We use an expensive grease because we believe it pays. When we spend money putting it into expensive machinery as we have, we believe in spending a little more to take care of it.

Our fixers don't oil their own machines. We have regular men that take care of this work. Both of them work on the day shift and we pay them enough to make them realize what their job being done right means to the company. We may be able to get by with less grease than we use but we just don't want to take a chance on the machines wearing out all of a sudden. It's easy to oil and grease a machine a little too much, but I've never seen a man yet who could replace the wear on a part caused from lack of grease.

Then with the high-pressure system we have eliminated a lot of the oil that previously dripped on the floor. Don't misunderstand me, there are still parts that have to be oiled in the regular way, but there is not as much oil on the floor now as there was before the installation of the system.

Just the other day we tore a machine down that has been running for several years with the high-pressure system. *The parts were just like new.* This in itself should speak for the high-pressure system.

If anyone does find a difference in the power saving by using this system, I would like to hear about it.

CONTRIBUTOR NO. 6517

EDITOR COTTON:

"CONTRIBUTOR NO. 6496" asks the question, on page 143 of the May issue of COTTON as to the reduction of power costs by installing high-pressure lubrication systems on full-fashioned machines.

We have installed this high-pressure lubrication system on two of our machines and we intend to run tests on them from time to time before we add it to others.

Our two machines are not on separate meters so we cannot tell just what saving there is in power costs, but we can tell the difference in the power needed by turning the machine over by hand. It is easier to turn by hand with the new installation. We won't attempt to make any definite statements as to power consumption but we will just pass this along to "CONTRIBUTOR NO. 6496" for what it is worth.

CONTRIBUTOR NO. 6518

EDITOR COTTON:

In answer to "CONTRIBUTOR NO. 6496", who asks about the saving in power and machine parts on full-fashioned machinery equipped with high-pressure lubrication system, I would say that the system is highly satisfactory.

One mill reports a saving in time of 80 per cent and a lubricant saving as high as 50 per cent. To deal specifically with the important bearings on the machine, we will discuss first the back catch-bar. With oil can and oil hole lubrication, using low viscosity oils, the back catch-bar shaft accumulates moisture

The only accurate measure of value in needles is how they perform in your machines — their ability to give you more firsts, fewer seconds, and a clearer, sheerer fabric. That we are America's largest producers of Spring-Beard Needles and that nearly all manufacturers of fine quality silk stockings are standardized on Royersford Needles is a tribute to dependable performance.

The prescription for better knitting

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ROYERSFORD NEEDLES

and dirt through the oil holes; this forms a gummy rust causing seizure or twisting of the shaft and resulting in breakage or poor work. With the high-pressure fittings and system, the back catch-bar, front catch-bar, needle bar and presser shaft require lubrication approximately every 200 hours of operation or only about once a month, resulting in a well-lubricated unit without wear or drippage of oil.

The breaking of coulier motion assemblies often occurs on full-fashioned machinery through seizure of bearings due to rust and inability of oil to function properly. On slow speed non-revolving shafts, wear on the reciprocating parts also results. With high-pressure lubrication it is necessary to oil the coulier motion only twice a month.

Another mill formerly oiled every two days until the high-pressure system was installed and they now lubricate every two weeks. This is a saving in labor.

CONTRIBUTOR No. 6520

Lighting Effects and "Nerves"

It is said that the human eye uses a large proportion of the body energy. If we do not look to the eyes of our operatives, we are causing them fatigue even though their physical labor is small . . . .

EDITOR COTTON:

This subject of nerves in a hosiery mill is important. Maybe some men think that it is up to the operatives to take care of their own health, eyes, and hands; there are peculiarities that develop in the human body that tend to retard work, cut down on production, and make the operative lose time in the mill. As mill men we must realize that when an operative remains away from work, another person that is usually less efficient must take his or her place. We must begin to study the little things in a mill that will slow an operative down and cause him to lose time from the machine.

We all know that the lower our labor turn-over is the better our work runs. A mill that is constantly changing help just can't reach the standard that it should in producing goods for the market. And I consider the loss of time by an operative to be just about the same as a high labor turn-over.

Have you ever noticed that when you walk up behind one of the loopers in a hosiery mill and speak to her or touch her on the shoulder that she nearly jumps out of her skin? Well, brother, that's nerves. All of us executives expect to develop nerves some day or other, but we fail to realize that the same happens in the people under us.

I have never seen a hosiery mill that was properly lighted. In our looper room the light comes in from windows in front of, behind, and over the looper's head. The eyes of a looper are on a level with the work and the operative has to look right into a window. Shades will help cut down on the light intensity but there must be some light.

We have tried all kinds and we find that an individual lamp over the machine is best. Still this is not a perfect lighting arrangement. To take care of the glare and to properly reflect the light from our individual lamps, we have erected boards that fit across the loopers. These boards are about 12 inches high and 24 inches wide. Holes are cut in them so as not to interfere with the working parts of the looper. Then the board, which is pasteboard, is bent slightly in the center to form a concave facing the operative. This keeps the light from being reflected away from the machine and throws it down on the points.

By this arrangement we have helped our operatives, cut down on the number of headaches and consequently loss of time on their part.

There are probably better arrangements than this but I also know that there are some not so good. I would like to know how other men take care of the lighting on their loopers.

CONTRIBUTOR No 6509

WE invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All acceptable contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

Let's Check Down the Line

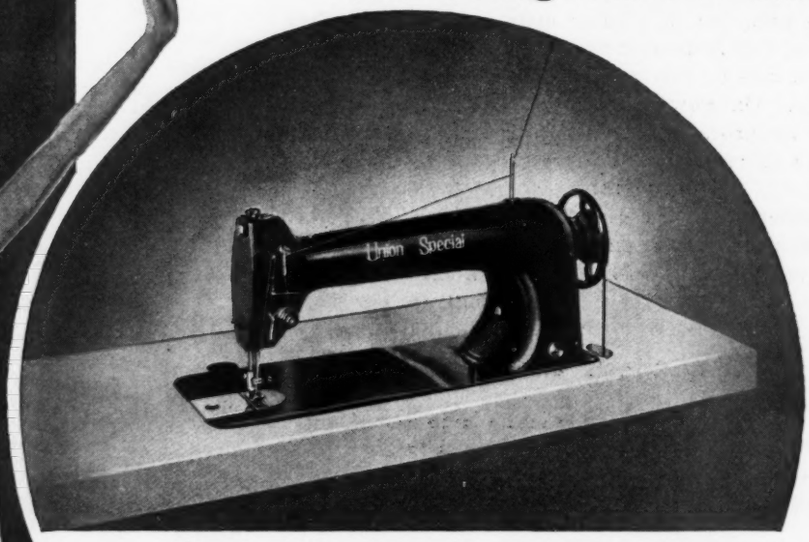
EDITOR COTTON:

For the past 20 years that I have been in some way connected with knitting mills, I have seen some of them work with new machines and fail and I have seen others purchase almost junk machinery and make a go of it. Now when a mill with new, up-to-date machinery goes in the hole, it is due to bad management. I believe there are as many mills losing money by employing unqualified foremen as by any other cause. I say this because a foreman is constantly in contact with each fixer and knitter and he learns to know the character and manner of each individual.

It is natural for a foreman or anyone else to like some people better than others, but this should never be made known on the job. It is often that a foreman will choose some of his employees with whom to associate on the week-end, and when they return to work Monday morning, they will be seen chatting and killing time. They may stand and talk for fifteen minutes and the foreman thinks this is all right, but when he goes down the aisle and meets two knitters or two fixers talking, he bawls them out.

The most likeable fellow is not always the most efficient worker and he doesn't deserve any more courtesy than the fellow that is running his job but that

Styles change ... so do sewing machines!



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does not cater to the foreman.

To a mill owner, I suggest that he know his superintendent and that the superintendent employ foremen that are broad-minded enough to produce results in the plant. If a company is using the proper equipment and the prices are right, and the mill is not making money, there is lost motion somewhere and it could be remedied by checking down the line.

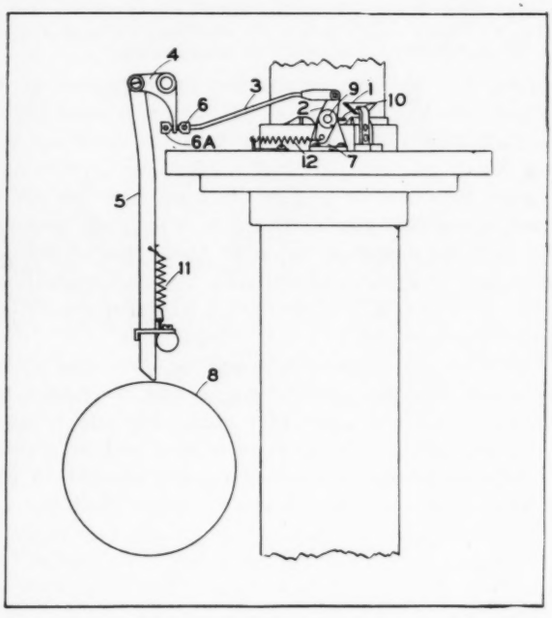
CONTRIBUTOR NO. 6552

A Simple Method of Producing Elastic-Top Hose

EDITOR COTTON:

This article describes a simple and effective method of producing elastic top hose in a Model K Scott & Williams machine.

The device for making this hose is shown in the accompanying drawing. Vertical rod, 5, receives its upward movement from a cam on the main cam drum, 8, through the bell crank lever, 4, and connecting rod, 3, to lever, 2, which causes wing cam, 10, which is integral with shaft, 9, to be raised sufficiently to raise



the needles so that the latches clear the loops of their stitches. Springs, 11 and 12, are to retrieve the motions of the parts to which they are attached.

The operation of this device is as follows. The make-up is accomplished in the usual Model K way except that, in this case, the auxiliary needle cam remains operative until after the rubber part of the top is complete. The device shown in the drawing becomes active at the end of the make-up and continues active until the rubber is introduced, when it becomes inactive. The action of this device is to clear the alternate inactive needles of their stitches. After the rubber yarn is changed to silk the transfer of the make-up loops is effected in the regular way and the hose is then completed as usual.

After the hose is finished there will be found a series of free loops at the make-up line. These ravel out easily and leave a clear pleasing effect at this point.

The machines equipped with this device do not give any added trouble and are fast producers due to the shortness of the hose.

CONTRIBUTOR NO. 6548

More on Zinc Soap Spots

EDITOR COTTON:

Replying to the question by "CONTRIBUTOR NO. 6499" on page 137, May COTTON, relative to the formation of line soap spots on full-fashioned hosiery when stripping with sulphoxalate agents*, I would say these are caused by the breaking down of the splash-proof and dull finish materials, used in finishing the hose, when these finishes react with the stripping agents.

It has been customary to give goods of this character a previous wash in a warm bath, which contains ammonia or a mild alkali, to loosen and partially remove the finishing materials before the stripping is attempted. However, there are stripping agents now that are especially made for removing splash-proof finishes, without any previous washing, and which do not form any line soap spots.

CONTRIBUTOR NO. 6536

*Three previous discussions of this question appeared on page 113 of the July, 1936, issue.

Breaking Out at Transfer in Making Full-Fashioned

EDITOR COTTON:

Back in your October issue, page 141, "CONTRIBUTOR NO. 6399" submitted a difficulty he is having with full-fashioned stockings breaking out during the transfer of legs on the footer. As suggested remedies in addition to those he has already tried, I offer the following:

If ravel courses are cut on the footer, the ends are too often drawn too tight by the knitter in a hurry to get all of the work done in the shortest possible time. This has become particularly acute since we do not work split ravel courses when running ringless.

Are the break-outs the result of "snips" when cutting the ravel ends?

It will be found good practice for more firsts and less re-topping to have the ravel ends cut on the topping bar, rather than on the footing bar.

Instep break-outs when worn also result in improper proportion of the instep heel dimension, particularly on chiffons. They are primarily due to too little fabric in the instep, in keeping with the gauge and thread, and also to the heel and foot construction.

One cause of this trouble is footer hook placed unevenly, not square to the needle bar, resulting in uneven draw-off. Another cause could also be improper manipulation of the take-up weights.

CONTRIBUTOR NO. 6525

A Discussion of Needle Breakage on 42-Gauge Full-Fashioned

EDITOR COTTON:

I note the question of "CONTRIBUTOR NO. 6441", as published on page 97 of the January issue, with reference to needle breakage on 42-gauge Reading full-fashioned machines. Among the other conditions he lists is the fact that he has changed from 3- and 4-thread silk to 7-thread silk. He states that he uses 50s/2 yarn in the welt, putting in 38 courses per inch; 7-thread 78 per cent 10 turns right in the leg, 100s/2 in the high heel, and one 50s/2 and one 100s/2 in the heel, 48 courses per inch in the silk.

Endeavoring to answer on the basis of the information he gave, I would say first that one of the conditions he has mentioned, that of having changed his machine from 3- and 4-thread silk to 7-thread silk, is probably responsible for the increased needle breakage he mentions.

Where machines have operated for quite some time on one endage or diameter of silk and then have been changed to another endage or diameter of twice as much or more, or vice versa, considerable trouble with needle breakage may be expected until the needles are worked into the new condition. In the example of changing from 3- or 4-thread to 7-thread, it will be found that many of the needle beards are not opened to take the increased diameter of silk. This results in split and broken threads or stitches and an increased needle breakage until all of the needle beards in the machine have been adjusted to suit the new working condition, and needle beards that have run for a long while and have lost some of their flexibility or springiness do not lend themselves favorably to new adjustment of wider opening and frequently break while being adjusted or quickly thereafter. Ordinarily troubles of this kind should disappear after operating on the new condition and being carefully followed up by the knitter, but when the trouble does not disappear after a reasonable time, then careful attention should be given to the necessary adjustment of the machines necessary to correct needle breakage.

Another thing which may lead to increased needle breakage in this man's case is the fact that 50s/2 is being employed in the welt. While it is possible to use 50s/2 in a reasonably satisfactory way, we feel quite sure that much better results would be obtained from a standpoint of broken needles, as well as a decreased volume of waste and seconds, if 60s/2 were employed in the welt rather than 50s/2. In fact, I would consider 50s/2 too heavy for the welt of a 7-thread stocking.

Your inquirer gave no information regarding the age and type of machine in question other than the make, the number of sections and the type of needles. We are of the opinion that machines with the long type needle (which he states he is using on the 20-section machines) are giving less trouble with needle breakage than the short type needle (which he states he is using on 24-section machines) and I would say again that I prefer 50s/2 a pretty heavy load for short type 42-gauge needles. We find no criticism to offer against the speed with which his machines are running (48 to 50 courses per minute on his 20-section, and 58 courses per minute on the 24-section) providing they are of fairly recent make and are properly adjusted.

What I have said is applicable to single-carrier and 3-carrier machines. I feel that a slight increase in needle breakage is to be expected on a 3-carrier machine, but this increase should not be such as to cause any very great increase in the cost of operation or expense of needle breakage.

Speaking in a general way, I would say that basing needle breakage on a yearly consumption, that an average of one needle per dozen would be a good record, and an average of two needles per dozen would not be bad. This would apply to either single-carrier or 3-carrier equipment.

CONTRIBUTOR NO. 6449

Disposing of Imperfect Tops on Infants' Fancy Top Goods

(EDITOR'S NOTE: *A question from* "CONTRIBUTOR NO. 6412" *appeared on page 115 of the September, 1935, issue, asking for methods of disposing of imperfect tops on infants' fancy top goods; that is, tops with one or more wrap yarns missing in a design, but perfect in every other respect. An answer, from* "CONTRIBUTOR NO. 6414", *appeared on page 153 of the February, 1936, issue. In addition, we have received the following three comments on this question.)*

Mill No. 1—Our experience in disposing of imperfect tops has been an expensive proposition due to the fact that such imperfect tops are nothing more than what we term seconds. After an accumulation of such tops we, as a rule, knit up feet out of different materials, sewing these tops on such merchandise and disposing of same at the price of seconds, which, as you know, and probably all practical mill men know, are invariably priced at considerably less than manufacturing cost.

Mill No. 2—Some years ago we put tops of this character into the regular waste and we found that the waste dealers were merchandising the waste so that some of the tops were recovered and used to put an inferior grade of hosiery on the market in competition with our own product. Since that time we have been slashing every top which we feel is imperfect to use. This does not cut down our revenue from waste but prevents re-use as an inferior product.

Answer No. 3—(A machinery manufacturer) I am afraid that I cannot help the mill man that wants to know how to dispose of tops which have one or more wrap yarns missing in his design. If I was the owner of the mill, I would check up on the man in the rib room to find out who it was letting the machines continue to run without yarn in the fingers that were supposed to wrap. In the largest mills in the country they have no particular problem that I have ever heard about of any even small percentage of tops that become seconds because of this reason. I believe that the mills themselves are better fitted to answer.

Once the goods in a knitting mill have reached the gray stock room, there is little difference in cost between perfects and imperfects. The logical point to reduce imperfects is during the first stages of manufacturing.

Machine-made means uniform diameter of hooks. This is an important advantage in achieving uniformly knitted fabrics... for the diameter of the hook portion of a spring beard needle determines to a great extent the size of the stitch the needle produces. Torringtons are machine-made—right down to the smallest detail—a fact that accounts for their reliable strength and accuracy... their consistent uniformity of temper, finish and dimension . . . the excellent quality of the work they do!

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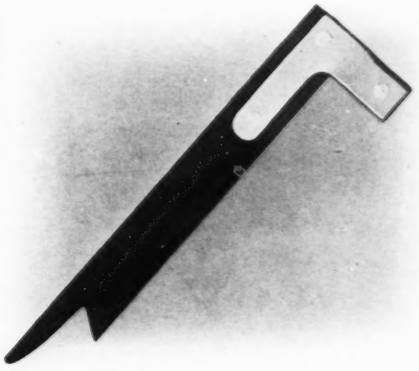
Torrington now offers you sinkers, dividers and split dividers... machine-made... built with the exacting attention to detailed accuracy and uniformity upon which is founded the traditional quality of Torrington needles.



TORRINGTON

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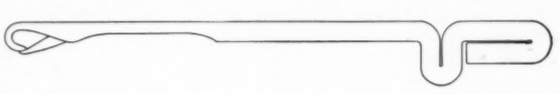
Buying hosiery for youngsters is serious business for most parents. Of course, they want them to look well and be in style... but *long service* is the key to the purses of practical-minded mothers. Long service is the result of good material plus good knitting... and good knitting calls for good needles. Why not use Torringtons—always—for this type of work? Torringtons are machine-made, smoother, stronger, more uniform. They are the right needles to use for producing top quality children's hose... hose that carefully buying parents "take to" at once and remember as "the kind that wears so well!"... There's a Torrington Needle for this type of knitting and every type of knitting.



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THE KNIT GOODS MARKETS . .

Philadelphia, Pa., July 16, 1936

HIGHER COMMODITY PRICES affecting cotton, rayon and silk, have stimulated a much more active demand for all types of knit goods made from these fibers. Not only has coverage by buyers of these lines been brought about earlier this year than last, but price advances in commodities, yarns and goods have caused buyers to make commitments for longer periods ahead than has been true for many months. While this applies to cotton and rayon underwear as well as several lines of seamless hosiery, it has been slow to develop in the full-fashioned section of the hosiery market. Although full-fashioned buying has recently been much heavier than a month ago, demand has been disturbed by the price cuts which have just been announced by several of the leading manufacturers of branded full-fashioned goods. In the outerwear section of the market, greater activity is apparent than a month ago as manufacturers of fall sweaters and sport coats begin to book contracts for this season in larger volume. A considerable amount of business is already in the hands of knitters from chain store operators and also from jobbers and within the next few weeks knitters anticipate a real interest from retailers. A good season is expected in outerwear lines with a considerable portion indicated for garments made from cheaper yarns, either made from a marino type yarn or a worsted twisted with cotton.

The feature of the hosiery market during the last month has been the reduction in the price of full-fashioned lines just at the time when raw silk was staging an upturn of fair proportions. While the reductions, which in the case of several branded lines were from 15 cents to $2.25, have been a disturbing influence, there are indications that they have also been the means of stimulating a much more active demand for this type merchandise. That this is true is indicated in a noticeable increase in the machine operating schedules of many of the larger full-fashioned plants in Pennsylvania, the largest one in Philadelphia having recently increased its operations by about 15 per cent. Some of the large hosiery distributing concerns of the country are believed to have recently placed very substantial orders for fall and winter delivery at the new and lower prices being named by most full-fashioned manufacturers.

Activity among manufacturers of anklets and infants' socks, which were the outstanding features of the market a month ago, has declined seasonally but these manufacturers are making plans for their new season's goods and in the case of manufacturers of men's half-hose, announcements have been made by leading manufacturers as to their new prices, which in the main remain unchanged. Westminster, Ltd., announced in its $10.50 line a 300-needle pure silk number, fancies in English wool, novelties in domestic wool, and a full-fashioned lisle which is new and will retail for $1.00 a pair. A new Lastex top is appearing in half-hose line for this fall created by the Phoenix Hosiery Company, which eliminates the horizontal 7-band effect used heretofore. Another feature is a sharp increased use of the transfer iron, giving detailed information about individual numbers. In addition to staples, and the firm's regularly half-hose range, Phoenix this fall is offering a rabbit's hair number at $3.55 to retail for 50 cents per pair and at $5.25 to retail for 75 cents; it is 6x3 wool rib lisle lined. For three-pair sales more attention has been given to using clocks of different shades on the same color socks. Half-hose manufacturers are looking for a big year in greens and maroon. Reports have been current in the hosiery market that some of the chains and large retail groups who came into the full-fashioned hosiery market when raw silk began its rise early in June, have been much more active in the last two weeks and probably more so than any like period since the beginning of this year. Another indication that the turn in demand for full-fashioned hosiery is at hand is seen in the report that one of the leading department store organizations of the country placed orders aggregating $750,000 for fashioned goods to be delivered from early July until November 1.

Strength in Low End Full-Fashioned

One of the outstanding developments in the full-fashioned market has been the relative strength shown in quotations on low-end merchandise. This has been due to higher prices for silk, curtailment among such manufacturers, and the refusal of employees to accept wage cuts from mills known to be selling goods at about cost. Continued buying of ladies' full-fashioned hosiery by large operators in the wholesale and department store trade during the last two weeks has just about taken up total production of 39-gauge goods of a number of mills for the next two months. The low prices offered were taken advantage of by a number of the largest buyers who would have extended their commitments later in the fall season had manufacturers been willing. But while taking this business at the low figures for July and August deliveries, manufacturers refuse to go further, feeling uncertain what might happen later. Some of the buyers claim they were able to contract for staple numbers in 39- and 42-gauge goods at the lowest figures met in a long time. With this business on manufacturers' books, a better market in the unbranded end of the business is assured.

Advance Buyers Want Low Prices

Pressure for lower prices in exchange for advance orders running into November has been apparent in the full-fashioned hosiery market. Some of the largest buyers are seeking to force the seller's hand by this inducement, though declining in most instances to provide details before September. While mill men are anxious to book advance business at this time, rather than wait upon uncertainties that might arise once the season is in full swing, they are not carried away by prospects of settling the problem of steady operation in this manner. Usually when buyers show eagerness to cover early and manufacturers agree, the latter has reason later to regret certain phases of the transaction. In other words, they found that the buyers generally have been shrewder in the trading.

A few of the chains have placed substantial orders running into fall, as previously reported but it is also evident that the largest share of this business was placed at very low prices. The rise of raw silk over the season's low, as well as over last year at this time, apparently did not deter some of the mill men from taking the business when it was offered and trusting to luck that there would be no repetition of the runaway market that occurred in silk last fall.

It is conceded throughout the market that fall volume will be large and that when more active coverage in general, moderate hardening of unbranded quotations will probably be seen. Unless raw silk stages further sharp advances and maintains them, the possibilities of more than a moderate rise in silk hosiery prices are considered remote, though some of the large chains have bought substantial quantities at the low point, the rank and file of the buying trade evidently do not consider there is sufficient incentive for them to anticipate their fall requirements as yet. All reports from retailers and wholesalers in practically every section of the country are that they are doing a good business in hosiery. This cannot fail to reflect itself in the primary market if manufacturers will use restraint in building up stocks.

Sales of Children's Generally Good

Excellent general sales of children's fall lines of hosiery have been reported, including all types. Advance business on wool and wool mixture half-hose has been substantial. Volume on women's seamless hose is reported larger than most manufacturers look for at this time of the year. Duplicate

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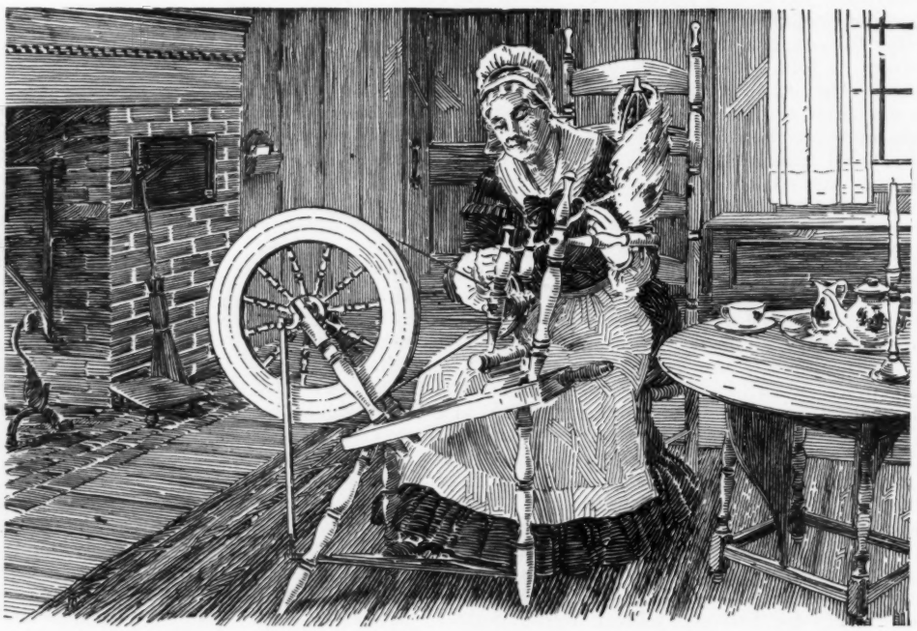

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business on infants' socks and anklets, and misses 'anklets for immediate delivery is arriving but volume is diminishing from week to week seasonally. New lines of infants' socks and anklets for next spring have been opened at unchanged prices. Here and there reports are heard of tentative showings of new samples already made to large outlets but many representatives of leading mills say they have not really started on their new lines yet.

In a move unexpected by the markets, in view of the upturn in silk, Julius Kayser & Co., and Gotham Silk Hosiery Co., reduced prices from 15 cents to $2.25 per dozen on their women's full-fashioned hosiery for fall. Kayser's minimum price was lowered from $6.00 to $5.85 per dozen with the retail price unchanged at 79 cents per pair. Gotham reduced the price of its low-end chiffon from $5.92½ to $5.75 per dozen and the service weight to $5.60 per dozen also leaving the 79-cent retail price unchanged. The downward revisions in both lines afford retailers an improved mark-up on practically all styles.

Lower Prices Made on Branded Full-Fashioned

The new prices were effective July 1 with Kayser's suggested retail figures operative August 1. Gotham's new retail prices were effective immediately. Following the surprising action of these two important manufacturers of branded goods, other manufacturers both in this and the unbranded section, have been revising their lists to meet this competition. Propper-McCallum cut its minimum price from $6.00 to $5.50 per dozen, thereby establishing a still lower level for the branded field. Ingrains remained unchanged. In the branded list issued for retailers, Berkshire Knitting Mills established a minimum of $6.00 with a retail price of 79 cents per pair.

Unbranded houses were particularly upset by the unexpected move of the branded houses. With raw silk prices steady and firm, unbranded mills had contemplated maintaining their quotations and in some instances, increasing them, but they were forced to bring their prices down because the larger buyers naturally expect unbranded mills to maintain the customary differential between branded and unbranded goods. It is pointed out that although raw silk prices are considerably higher than a year ago, unbranded quotations on low-end goods are slightly below those of last year. The smaller unbranded manufacturers are expected to bear the greatest brunt of this new turn in the market.

Criticism has been leveled at the makers of branded lines for this reduction but it is reported that Gotham and Kayser are engaged in a strenuous battle for the branded business. Other branded manufacturers that followed Gotham and Kayser downward included Interstate Hosiery Mills; Mock, Judson, Voehringer Co.; and Roman Stripe Mills. In the last three years the full-fashioned business has been largely in the hands of makers of unbranded goods, estimates placing their control at about 80 per cent. A year ago, however, the branded houses began to regain part of the volume, mainly because the consumer had not been wholly satisfied with the quality of unbranded merchandise. Increased buying power was also an incentive to buy better stockings. Now that buyers are looking more favorably upon branded lines, these manufacturers intend to maintain this interest even at the cost of concessions, such as have just been made.

The recent rise of low-end unbranded goods gave the market a boost about the middle of June. From that point on, it has been generally assumed that if any reductions occurred, they would appear only in the higher brackets. The present branded reductions come therefore as a distinct surprise to sellers of unbranded lines who were hoping the price spread between branded and unbranded goods would remain as before. They are now beginning to realize that the fall season may not be so full of promise as it would have been had branded houses maintained the general minimum of $6.00 a dozen.

On July 13, Phoenix Hosiery Company disregarded the unsettled price situation and established a minimum of $5.90 a dozen. The Holeproof Hosiery Co. opened its full-fashioned line for fall also at a minimum of $5.90 per dozen. In unbranded merchandise this company quoted a 5-thread all-silk number, gauge not specified, at $5.25 to retail at 69 cents a pair. Wholesalers and chain buyers are insisting upon a difference of at least 75 cents a dozen between quotations on branded and unbranded goods, which means that few are willing to pay more than $5.10 for a good quality of 42-gauge ringless. Buyers are interested almost exclusively in ringless goods at present and especially so where 4-thread and 7-thread, 42-gauge merchandise is concerned. It is noted also that even in service weights the mills are dropping the convention numbers in favor of ringless. In fact, several of the leading producers have discontinued conventional numbers altogether and because of their action, it is possible that prices may later be a little firmer on such of these styles still available in the market.

"The First Six Months" in Hosiery Industry

In glancing back over the first six months of this year, there are a number of developments affecting the hosiery industry which can be viewed as being optimistic in tone. A development which may have the greatest beneficial influence upon the industry is the comprehensive survey to be made under the auspices of the National Association of Hosiery Manufacturers. Voted at the recent annual convention, this program is ceasing to be merely an idea and is becoming more tangible. A sub-committee has just been appointed which will soon be in direct contact with local hosiery associations and with mill officials in the different branches of the industry. It is hoped that this study, formulated to seek out weakness and evils, will be the means of correcting them and placing industry on a better paying basis. It is understood the committee will consult with the presidents and executives of the several local associations in developing the study. In addition, it will consult manufacturers in different branches of the industry when dealing with problems of particular concern to such branches.

In the field most closely associated with the hosiery industry—the retailer, chain and mail order house outlets to the consumer—the first six months of the year yielded good gains and in some cases substantial gains over the comparative period of 1935. These distributors have been doing an exceptionally good job in getting merchandise into the hands of the public. Their merchandising technique has developed to an exceedingly high degree and hosiery manufacturers can look forward to as good if not better merchandising of their product in the future.

Despite the complaints of manufacturers regarding sales, the latest statistics of the National Association of Hosiery Manufacturers on shipments are quite optimistic. They show that for May shipments were 3 per cent larger than for May last year and that for the first five months of the year mills shipped 3.8 per cent more goods than they did in the corresponding period a year ago. Not only are sales up but indications are that production is being kept under more reasonable restraint and stocks have declined. The report says that due largely to an increased demand for women's seamless silk hosiery, anklets and cotton bundle goods, total shipments of all hosiery during May 1936 were about 3 per cent larger than in the same month of last year. Each major type of hosiery, with the exception of woolen goods, contributed to this gain. In the case of women's seamless hosiery, excluding wool, anklets and cotton bundle goods, shipments so far this year were approximately 9 per cent ahead of shipments for the first five months of 1935.

Total shipments of women's knee-length hosiery in May reached a new high point, falling short of being double the production of this type merchandise in May 1935. Of the large production of knee-lengths in May, more than half were full-fashioned and

Botts Patent Granted

PHILADELPHIA.—The weltless stocking designed by John M. Botts, senior partner of Harrington and Waring, on which a patent was applied for as long ago as August 21, 1931, has finally been recognized by the United States Patent Office and patent No. 2,032,582 is now in the hands of the inventor, the papers describe the method by which the stocking is produced, and draw a clear comparison beween Mr. Botts' invention and the regular type of full-fashioned hosiery It is the inventor's opinion, stated in his elaboration of three claims that a welt of double thickness, such as characterized the ordinary stockings, is not conducive to comfort. He set about perfecting a stocking of a single thickness throughout, therefore, and achieved not only more elasticity at the welt but a slightly lower cost of operation.

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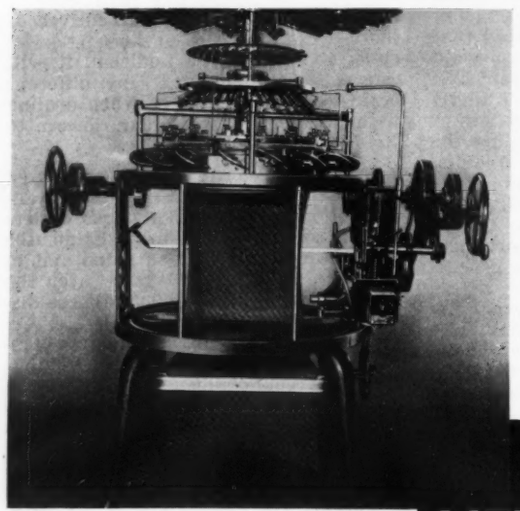

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the remainder seamless. Total production of all types of hosiery in May was approximately 100,000 pairs below shipments for the month, bringing about a corresponding decrease in stocks. All of these declines in stocks were reported in the full-fashioned branch of the industry, which in June curtailed production substantially.

More About Jap Imports

The problem of mounting imports of cotton hosiery mainly from Japan is receiving more careful attention from the industry. The National Association of Hosiery Manufacturers has completed a comprehensive brief on the subject which it is believed will be one of the clearest and most effective ever presented to the Tariff Commission. It will be supported by evidence in the form of samples of Japanese imports, prices at which they are offered here, along with samples of comparable domestic merchandise with the cost of American manufacturing and the minimum price at which it can be sold. The research staff of the association has analyzed all of the Japanese samples and a summary covering about 25 types of hosiery is being sent to all American manufacturers producing like merchandise with a form on which they are asked to give a breakdown of their manufacturing costs and the prices at which their goods are sold. It is believed that if this information from domestic manufacturers shows their cost higher than the sale price of the imported numbers, a strong case for protection will be established.

The distribution of imported hosiery from Japan is being constantly extended through the increasing number of regular hosiery agents being forced into the business. These agents who have been representing domestic made hosiery for years, and have held out against promoting the sale of competing goods from an outside country found that they were losing business as a result of their patriotism, and are now gradually getting into the import trade themselves. Some of these agents have recently been buying large quantities of several numbers of Japanese hosiery for the fall season, which numbers include men's random or acetate socks and men's rayon plaited fancy numbers; paying all charges and the duty, these agents find that they can import such numbers from Japan in comparable qualities that permit underselling domestic made merchandise by as much as 15 to 17 per cent.

Total imports of hosiery from Japan during the month of May, the National Association of Hosiery Manufacturers report, amounted to 195,205 dozens, which compare with only 31,843 dozens in May 1935. The average value per dozen of this hosiery at Japanese ports was only 30 cents. The Japanese shipment to this country during the first five months of this year made up over 85 per cent of all hosiery coming from abroad. Citing the fact that the principal competing country is Japan, the brief points out that the difference in cost of manufacture cannot be equalized by increases in the rates of duty and urges that new duties based on American valuation be put in effect. Representatives of the Tariff Commission have been conferring with the Association and it was pointed out that the commission must make an investigation of its own before it can make recommendations to the President.

The Underwear Situation

The last two months have been exceptionally active ones for dry goods wholesalers, and the knit goods departments of these firms have been getting their share of this business. One large wholesale house has shown a gain of 14 per cent for the half year in its underwear department. Stocks of all kinds of underwear both heavy and summer weights are reported to be in excellent shape, both among wholesalers and retailers. From this angle alone, the prospects for the next six months are regarded as most satisfactory. The only disturbing factors that manufacturers can now see in the picture concern the drought in parts of the West and Southwest and also the possibility of labor troubles in large industries. The strike threat in the steel industry is mentioned in this connection. In the underwear industry itself, there also appears to be some concern among manufacturers in different parts of the country over the possibility of labor trouble.

Some of the mills that have recently advanced heavy men's cotton ribbed underwear for fall have been getting inquiries on prices and deliveries from wholesalers not among their regular customers. It is reported that about August 1 lightweight underwear lines will be shown for the spring of 1937. The average wholesale buyer is expected to be interested earlier this year in next spring underwear than for several years past. For one thing the rising market in heavy underwear will have its effect.

Last year the spring opening for 1936 did not take place until well after Labor Day and the advance in this date now talked about is due not only to the stronger price lists but also because wholesalers' and retailers' stocks of underwear have been reduced to a lower level than has been seen in several years. The sharp rise in cotton likewise is of some importance in helping advance selling for it is natural for buyers to be more willing to operate on a rising market than a declining one. The advance already begun in part of the fall underwear market is showing the trend of price firmness in the industry.

Manufacturers of knit underwear are beginning to take more account of the sharp rise in price of cotton in relation to the cost of their product, particularly heavy numbers of men's fall goods. Since the opening of fall prices a number of months ago, the rise in the price of cotton has been more than 1½ cents a pound, which means a serious increase in cost for underwear requiring a large amount of raw material. The prices at which the fall underwear was sold was recognized as too close for safety for the mills even at that time. Now that cotton has gone up so rapidly, the question of taking further business at the old figures has been in the minds of manufacturers. Several of the leading mills accordingly have announced an advance of 25 cents a dozen on a staple cotton union suit and advised they cannot take new business before October delivery.

With the fall season under way so far as first deliveries for the season are concerned, the main question now is security of supplies wanted by wholesalers and chains. It is known that a number of the larger mills making men's cotton ribbed are sold for several months ahead, which means well into the fall months. Duplicates from regular customers must necessarily be provided for so that these mills can now see production well secured for much of the fall.

Those large mills that regularly go direct to the retail trade have also been doing a good business for the fall season.

The reports on the advance selling of women's and children's underwear are not so bright. The average salesman for a wholesale house balks at taking out women's and children's samples on the first selling trip he makes. It is on the later trips that the salesmen figure on picking up the next season's business in these lines. While not as sensational therefore, as the men's advance fall business, bookings in women's and children's underwear are up to the average this fall. In addition to larger demands for most types of underwear from the regular trade, the Army Quartermaster Depot has issued invitations calling for bids on large amounts of summer underwear which will further increase the tight delivery situation among many mills on this type garment.

Outerwear

Demands for various types of fall and winter outerwear is expanding but not at as rapid a rate as in the underwear end. Prices in these lines show no more change and buyers that have not already done so, are in no hurry to place business and indications are that many large firms will postpone their commitments to the last minute. There is a feeling among many that prices of wool and worsted yarns are more apt to come down than to advance and this feeling has the tendency of causing the fall season to develop slowly. Notwithstanding this, sweater mills are operating at more active rates and definite indications of this are seen in the more active operating schedules of worsted yarn producers.

Manufacturers of infants' lines have been operating at the most active rate of any in this section of the market and there has also been a fair rate of activity among manufacturers of women's knitted sport coats. Knitters of men's and boys' sweaters in Pennsylvania are slower than the above mentioned trades, but they, too, are now beginning to show a more active picture.

The smallest carry-over in recent years marks the close of the 1936 bathing season and nearly all manufacturers and distributors are well satisfied with the results. Whether because of the campaign to maintain retail prices until July 4 or because of the cautious manner in which most jobbers operated throughout the season, prices at wholesale remain firm. Usually towards the end of June there are reports of sharp revisions but these have been the exception rather than the rule to the present time.

REVIEW OF THE YARN MARKETS

Spurt in Sales of Cotton and Rayon Yarns With Prices Showing Marked Increases

Philadelphia, July 16, 1936

THE YARN MARKETS have been featured by the most active demand for cotton during the last month and by record-breaking sales of rayon. There has been also a more active demand for worsted and silk yarns but new poundage in the latter two types has not been comparable with that in cotton and rayon. The price trend of all yarns has been upward with the most outstanding increases being apparent in cotton yarns. Price increases, as is usually true, have resulted in more active coverage by manufacturers and for deliveries farther ahead.

Cotton Yarns

Spot cotton has advanced almost 2 cents a pound during last month, registering the most substantial advance of the year and prices of cotton yarns acting in sympathy have been advanced to an even greater extent. Early in June demand for yarns was quiet and prices at that time were on an unprofitable basis for spinners. This situation has changed drastically within the last month and not only have yarn prices advanced in sympathy with the raw material but spinners have taken advantage of the upward movement, together with a very active demand to place yarn prices back on a more profitable level.

Spinners and commission houses generally report that sales during the last month have been of the most active rate of this year and in quite a number of cases, the most active for as many as five years. As is usually the case, buyers of knitting yarns have bought farther ahead than manufacturers of woven fabrics. Many knitters are reported to have covered a substantial portion of their requirements for the balance of this year and several into the first quarter of 1937. Weavers, on the other hand, have covered only about four months ahead at the most, their purchases in June being largely for July and August shipments, while contracts this month have been mainly for September and October. Manufacturers in both the woven and knitting ends have been fortunate in that they succeeded in placing a large amount of business with spinners early in June at prices very little above the low point of this year.

Since that time, the general practice has been for them to add to their commitments as prices have advanced so that their average cost for yarns now on spinners books shows a level considerably under that of current prices named by spinners. For example, large amounts of carded knitting cones were purchased around 22 cents for 10s, which compares with current asking prices of 24 to 24½ cents, this count having advanced from 2½ to 3 cents during the month. A similar development occurred in weaving numbers, spinners reporting a very heavy movement when prices were from 25 to 27 cents for 20s two-ply warps, compared with a present range of 28 to 28½ cents for this number. Carded weaving yarns are up 3 cents a pound since the middle of June with 30s two-ply warps held now at 32 to 32½ cents compared with 29 to 29½ cents.

Due to the severe scarcity of long staple cotton, combed yarns have registered even greater advanced in the month than have carded. Spinners not only find it difficult to obtain even small supplies of cotton from an inch and longer, but when they do locate supplies, they are compelled to pay several hundred points on the price of middling. This development has not only caused extreme advances in combed yarn prices but has been the main factor in causing two separate advances during the last month in mercerized yarns. The price of 30s single combed has increased from 3 to 4 cents during the month or from 34 cents to 38, the price asked at present by many spinners although knitters claim that they are still able to buy at a cent under the latter figure.

Worsted Yarns

Although activity has not been comparable with that of cotton, worsted yarns have been noticeably more active in the month as manufacturers of outerwear expand their operations on fall and winter lines. There is a large amount of substitution occurring at present in these yarns, where manufacturers are buying cheapeners in an attempt to reduce their cost from that when all higher priced worsted is used. They are able to obtain a two-ply yarn for around 80 cents, made of one strand of worsted and one strand of cotton compared with a price of approximately $1.35 for the same in all worsted. Manufacturers that sell chain stores and many that sell jobbers are going into knit goods of this type in order to meet the requirements of chain distributors for sweaters to sell in certain definite and well-defined price brackets.

There has been no important change in worsted yarn prices over the month so that there is less incentive for consumers to cover ahead as noted in cotton and rayon. Manufacturers selling to the chain stores and who have a large portion of their fall business in hand have covered a large percentage of their yarn requirements and spinners are making good deliveries on such orders. On the other hand, those that sell to the retail trade direct have been slower to receive goods orders and have been more conservative in placing yarn contracts. At the same time, most manufacturers believe that no important advances in worsted yarn prices are in prospect and they are therefore apt to pursue a more conservative buying policy than in other type yarns.

Rayon Yarns

Sales of rayon yarns have again broken records during the last month. This activity follows the price advance which was placed in effect June 15 when 150 denier was advanced 3 cents and on June 18 the prices of knitting yarns and knitted rayon cloths were advanced 5 cents a pound. Several of the largest producers of yarns in the country report that demand during the month has been larger than they could supply and in several instances they are allotting yarn to customers or in other words, they are not able to accept all the business that is being offered them.

One indication of the extreme activity that has been apparent in rayon yarns is in the exceptionally small stocks now held by the larger producers, one of which reports that it is holding less than two weeks supply, whereas earlier this year, its average was at least six weeks stocks.

Silk

After hitting a low point at the beginning of June, silk has staged an advance of fair proportions and during the last months cracked double extra has increased from approximately $1.60 to $1.80, which compares with a high of $2.10 touched January 2, 1936. The firmness of this commodity within recent weeks has caused a conservative increase in business, both in respect to silk and yarns made from it, but activity in this product is the least conspicuous of any type yarn in the market. One reason for this is that American manufacturers are not confident that the upturn will continue and at the same time purchases have not been heavy because a large number of the trade covered their needs well into the fall when prices were considerably lower. Manufacturers of full-fashioned hosiery are becoming more active and in some instances they have been buying silk or silk yarns more freely. Weavers on the other hand continue to consume silk in much smaller quantities than in former years, most of this trade now being engaged on their fall lines in which rayon plays the most important part as has been true for the last few seasons.

Klein Elected Vice-President of John P. Maguire & Co.

At a recent meeting of the board of directors, E. Stanley Klein was elected vice-president of John P. Maguire & Company, factors, 370 Fourth Ave., New York City. For several years Mr. Klein has been associated with Amos Parrish & Co., merchandising and consulting agency serving both manufacturers and large retailers. He directed the activities of the manufacturing division of this company's business. His experience and understanding of this function is expected to be an added element to the strength of the Maguire organization.

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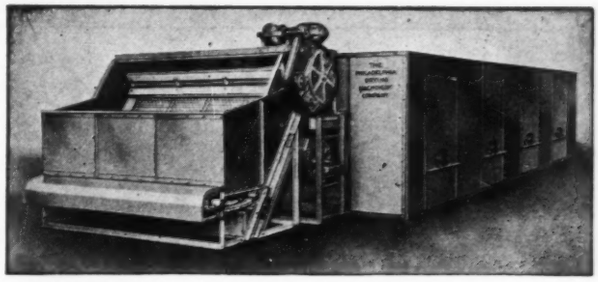

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ONE BATH WATER PROOF
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HIGHEST QUALITY KNITTING YARNS
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It Boils Thin . . . Has More Penetration
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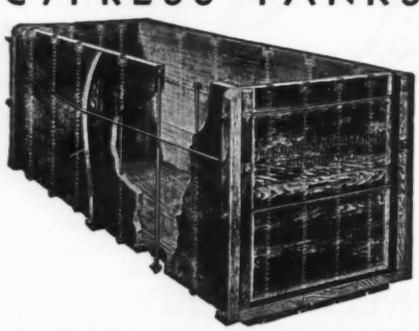

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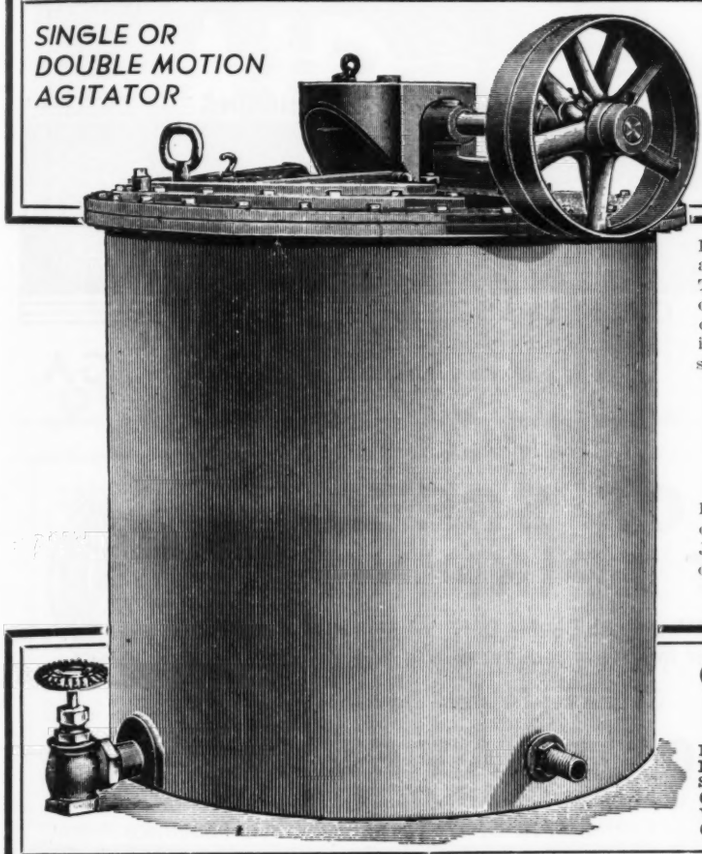

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GOLDENS' SIZE KETTLES

It pays to use Goldens' Size Kettles, as many of the objectionable features found in other designs have been eliminated. These improved kettles have been carefully designed under the direction of expert operating mill men. The body is cast solid of the highest quality grey iron, and all fixtures are fitted in workmanlike manner with machined joints. Our standard sizes and capacities are as follows:

CAPACITY GALLONS	HEIGHT	DIAMETER
110	32″	32″
160	36″	36″
250	42″	42″
360	48″	48″

For mixing, kettles can be furnished with stirrers, propellers or paddles, or combinations of same. For heating, Steam Jacketed Kettles can be furnished, or with one or more layers of brass coils, closed or perforated.

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"Propellair Fans have Certified Ratings and are guaranteed to move a greater volume of air per minute than any other airplane-propeller type fans with equal diameter and power requirements."

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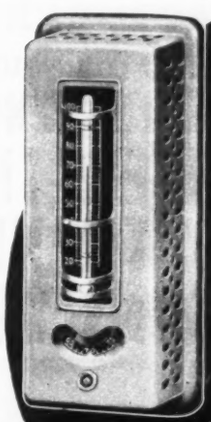

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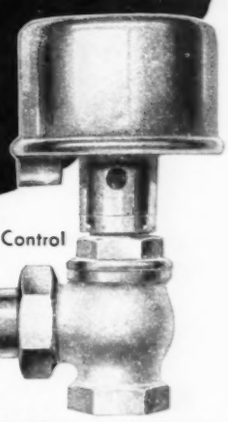

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Bright, clean colors, free from contamination of colors previously used.

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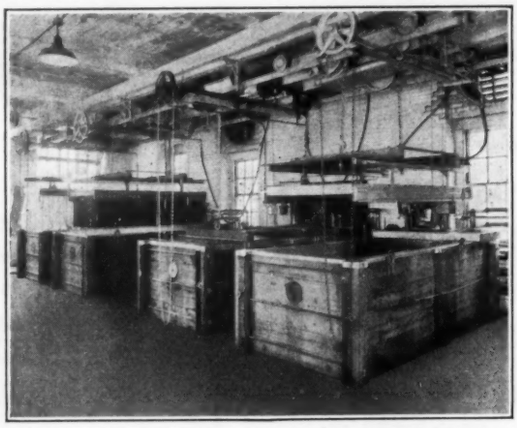

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THE PILLARS FOR YOUR SIZING AND FINISHING

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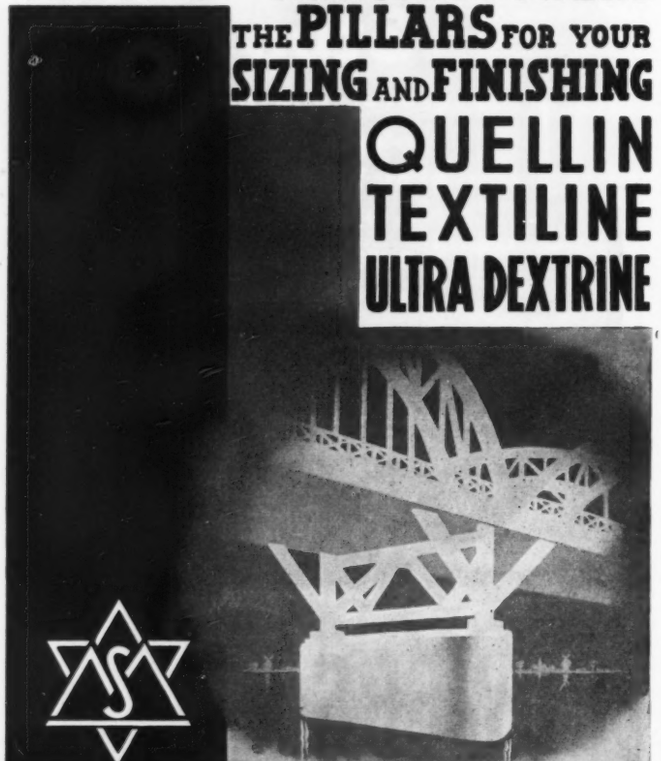

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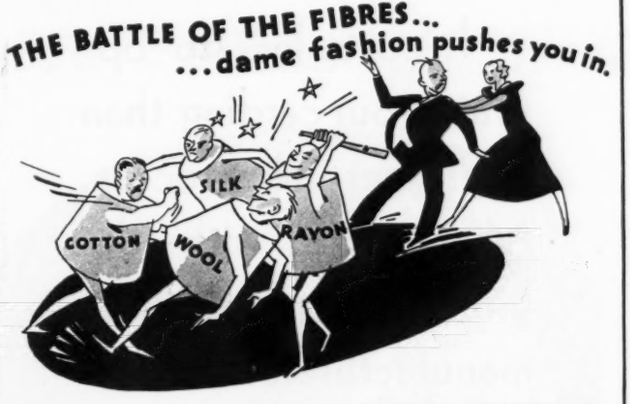

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helps you win

Following his natural inclination, the average textile manufacturer adopts a policy of isolated neutrality in the "battle of the fibres". He continues to make the same old fabrics he has always made.

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Raise Production and Health Efficiency in Your Plant

TINT Your Factory Windows with

TRUSCON

Opaltone WINDOW GLAZE

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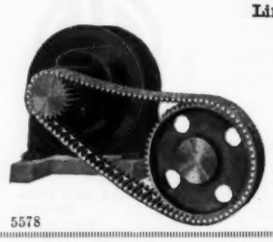

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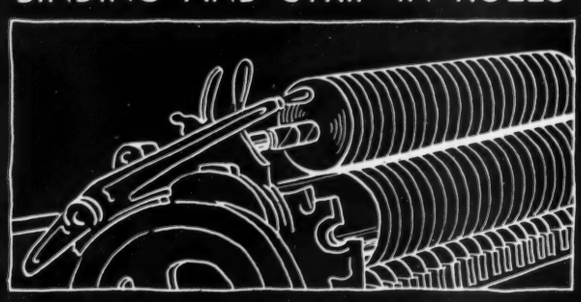

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A Parks Automatic Airchanger will eliminate spotty conditions from your list of worries by giving your mill *air change* balanced with *proper humidification.* With windows shut, this equipment introduces *carefully measured* quantities of fresh air, circulates it evenly throughout the room and maintains uniform humidity conditions at all times. As a result, it improves quality and quantity, lowers excessive summertime temperatures and makes working conditions more comfortable and profitable.

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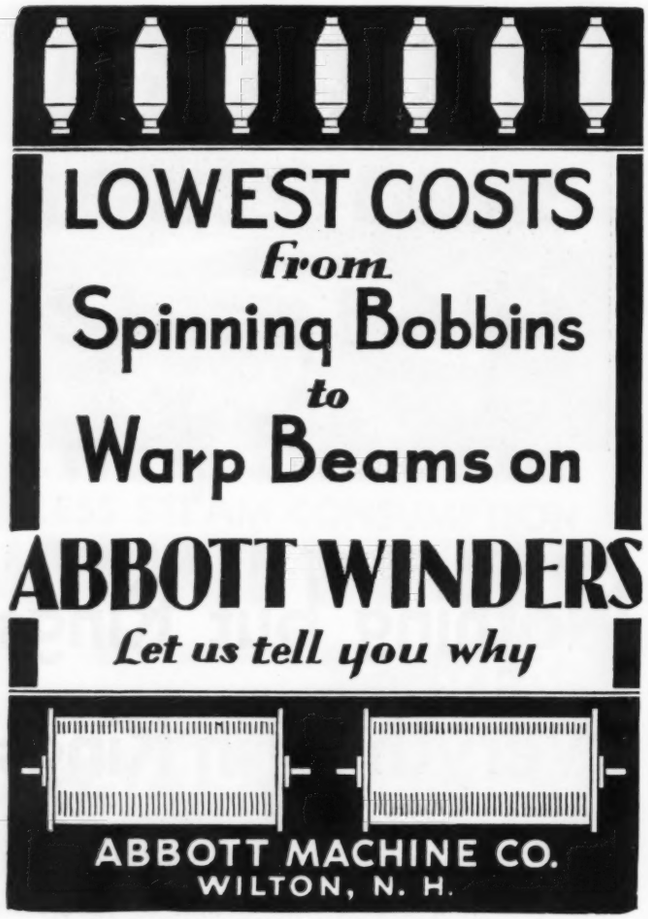

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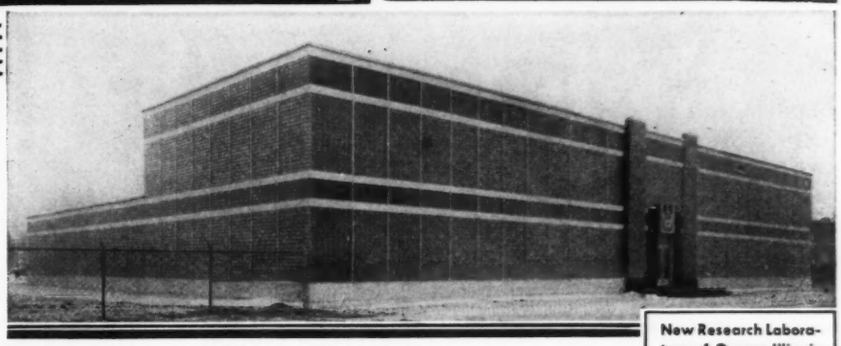

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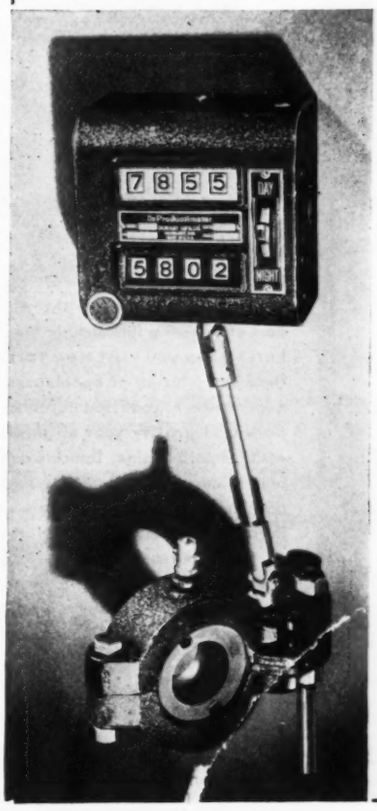

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Easy operating

Sealed and Locked
Against tampering and creeping

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Built to Stand up
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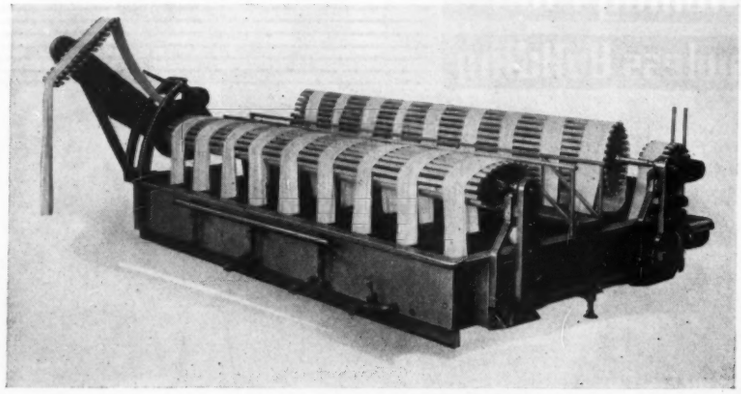

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This machine is furnished in steel or wood construction, as desired, in one or more units. Speed of operation according to work to be performed up to 120 yards per minute.

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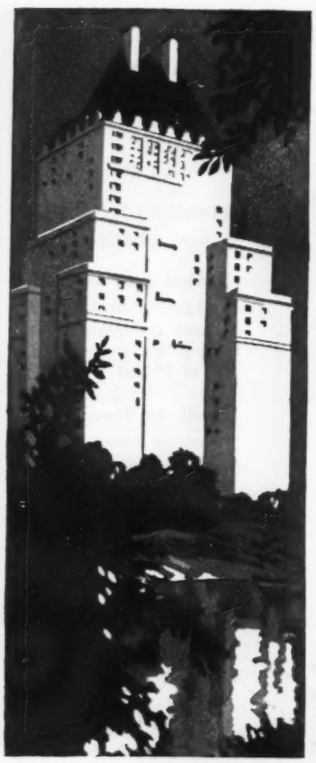

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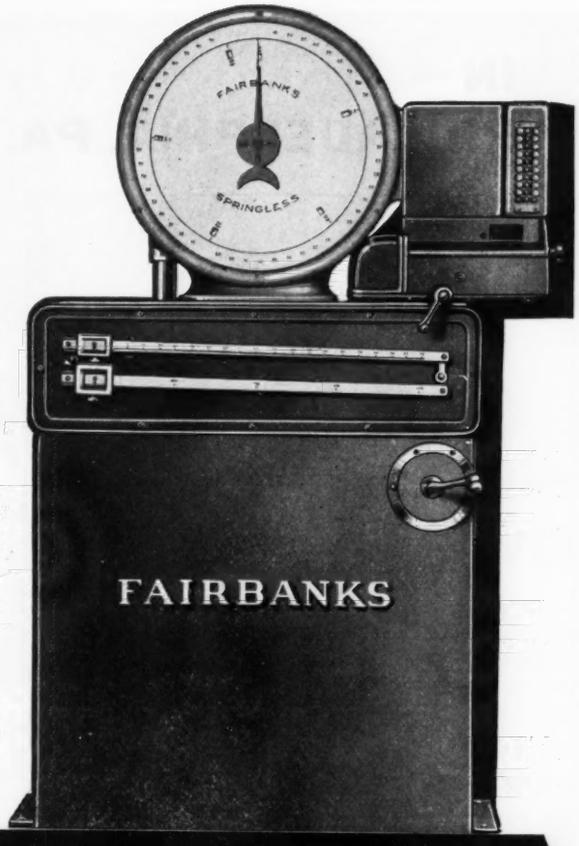

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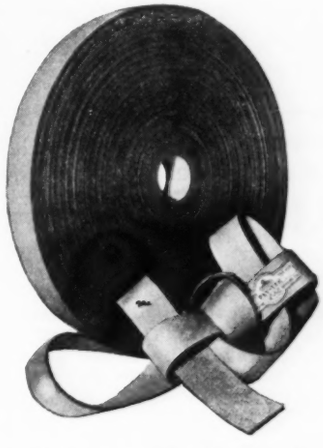

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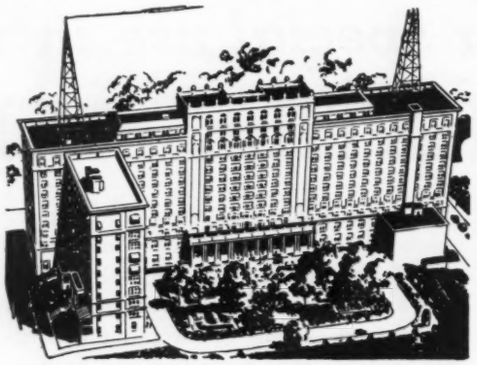

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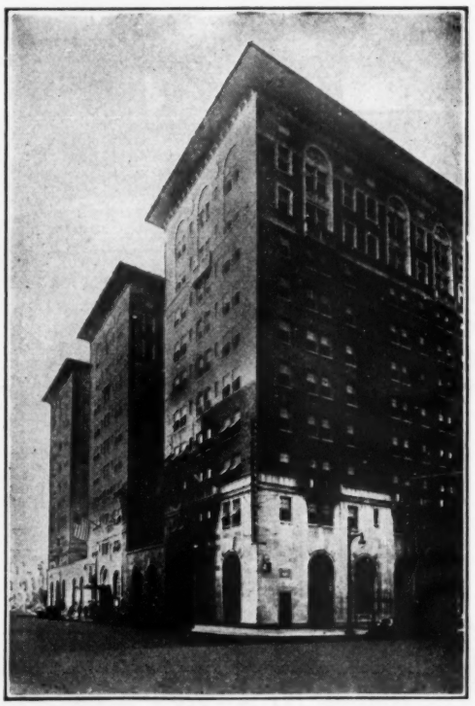

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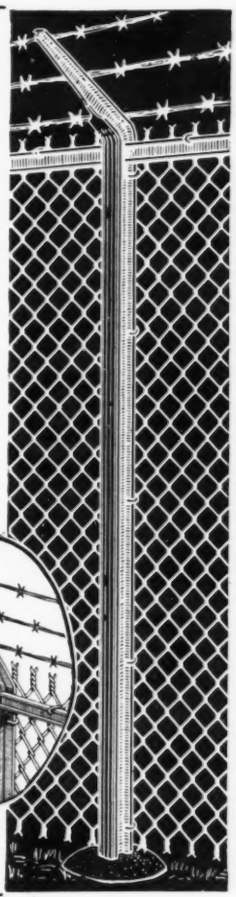

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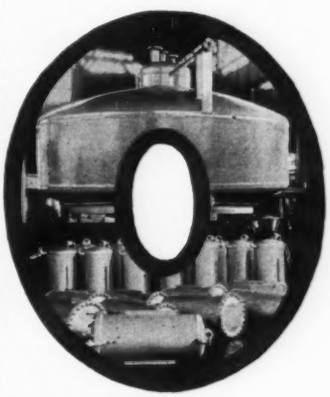

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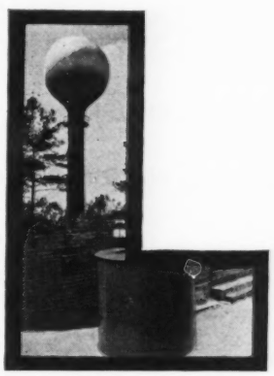

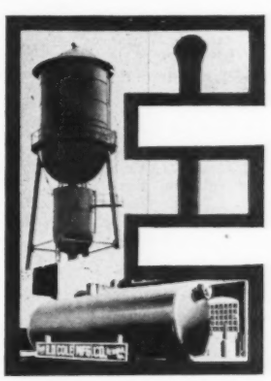

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